



BroadSoft Partner Configuration Guide

Yealink SIP-TxP/T3xG Series

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BroadWorks® Guide

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Version	Reason for Change
1.1	Introduced document for Yealink SIP-T28 version 2.0.0.9.
1.2	Edited and published document.
1.3	Updated document for additional models.
1.4	Edited and published document.
1.5	Updated document for Yealink SIP-T28 version 2.51.0.1 test with BroadWorks Release 17.0. Updated the document for Device Management.
1.6	Edited and published document.
1.7	Updates to Device Management configuration requirements.
1.8	Edited and published document.
1.9	Added T2xP configuration instructions.
2.0	Edited and published document.
2.1	Modified to incorporate the T18P model and to update the Device Management section.
2.2	Edited and published document.
2.3	Modified manual instructions for device management file parameters.
2.4	Updated document for Yealink SIP-T2xP version X.60.0.110 test with BroadWorks Release 17.0. Modified to incorporate the T38G and T32G model and to update the Device Management configuration instructions.
2.5	Edited changes and published document.
2.6	Updated document to incorporate T21P, as a supported device model.
2.7	Edited changes and published document.
2.8	Updated the document for Yealink T2xP/T3xG version x.70.0.x test with BroadWorks Release 18.sp1.
2.9	Edited changes and published document.
2.10	Updated the document for Yealink TxP/T3xG version x.71.0.x test with BroadWorks Release 19.sp1.

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1 Overview

This document describes the configuration procedures required for a Yealink SIP-TxP/T3xG series to make full use of the capabilities of BroadWorks. This includes the following models:

- SIP-T19P
- SIP-T20P
- SIP-T21P
- SIP-T22P
- SIP-T26P
- SIP-T28P
- SIP-T32G
- SIP-T38G

The SIP-TxP/T3xG is one of the many desk phones that interoperate with BroadWorks.

The SIP-TxP/T3xG uses the Session Initiation Protocol (SIP) to communicate with BroadWorks for call control. It also translates voice to audio packets for transmission across a packet network.

This guide describes the specific configuration items that are important for use with BroadWorks. It does not describe the purpose and use of all configuration items on the SIP-TxP/T3xG series. For more information, see the *Yealink TxP SIP Phone User Manual* [\[1\]](#) supplied by Yealink.

2 Interoperability Status

This section provides the known interoperability status of the Yealink SIP-TxP/T3xG with BroadWorks. This includes the version(s) tested, capabilities supported and known issues.

Interoperability testing validates that the device interfaces properly with BroadWorks via the SIP interface. Qualitative aspects of the device or device capabilities not affecting the SIP interface such as display features, performance, and audio qualities are not covered by interoperability testing. Requests for information and/or issues regarding these aspects should be directed to Yealink.

2.1 Verified Versions

The following table identifies the verified Yealink SIP-TxP/T3xG and BroadWorks versions and the month/year the testing occurred. If the device has undergone more than one test cycle, versions for each test cycle are listed, with the most recent listed first.

Compatible Versions in the following table identifies specific SIP-TxP/T3xG versions, which the partner has identified as compatible and should interface properly with BroadWorks. Generally, maintenance releases of the validated version are considered compatible and may not be specifically listed here. Contact Yealink for any questions concerning maintenance and compatible releases.

NOTE: Interoperability testing is normally performed with the latest generally available (GA) device firmware/software and the latest GA BroadWorks release and service pack at the time the testing occurs. If there is a need to use a non-verified mix of BroadWorks and device software versions, customers can mitigate their risk by self-testing the combination using the *BroadWorks SIP Access Device Interoperability Test Plan* [4].

Verified Versions Table

Date (mm/yyyy)	BroadWorks Release	SIP-TxP/T3xG Verified Version	SIP-TxP/T3xG Compatible Versions
08/2013	Release 19.sp1	SIP-T19P 31.71.0.15 SIP-T21P 34.71.0.60 SIP-T20P 9.71.0.110 SIP-T22P 7.71.0.110 SIP-T26P 6.71.0.110 SIP-T28P 2.71.0.110	Any maintenance version of the verified versions.
11/2012	Release 18.sp1	SIP-T28P 2.70.0.60 SIP-T38G 38.70.0.50	Any maintenance version of the verified versions.

Verified Versions Table

Date (mm/yyyy)	BroadWorks Release	SIP-TxP/T3xG Verified Version	SIP-TxP/T3xG Compatible Versions
05/2011	Release 17.0	SIP-T12P 5.60.0.110 SIP-T20P 9.60.0.110 SIP-T21P 21.61.0.10 SIP-T22P 7.60.0.110 SIP-T26P 6.60.0.110 SIP-T28P 2.60.0.110 SIP-T32G 32.0.0.20 SIP-T38G 38.0.0.50 SIP-T80P 8.60.0.110	Any maintenance version of the verified version.
03/2011	Release 17.0	SIP-T18P 18.0.0.80	Any maintenance version of the verified versions.
10/2010	Release 17.0	SIP-T12P 5.51.0.10 SIP-T20P 9.51.0.10 SIP-T22P 7.51.0.10 SIP-T26P 6.51.0.10 SIP-T28P 2.51.0.10 SIP-T80P 8.51.0.10	Any maintenance version of the verified versions.
09/2009	Release 14.sp5	SIP-T12P 5.0.0.9 SIP-T20P 9.0.0.9 SIP-T22P 7.0.0.9 SIP-T26P 6.0.0.9 SIP-T28P 2.0.0.9 SIP-T80P 8.0.0.9	

2.2 Interface Capabilities Supported

This section identifies interface capabilities that have been verified through testing as supported by Yealink SIP-TxP/T3xG.

The *Supported* column in the tables in this section identifies the Yealink SIP-TxP/T3xG's support for each of the items covered in the test plan, with the following designations:

- Yes Test item is supported.
- No Test item is not supported.
- NA Test item is not applicable to the device type.
- NT Test item was not tested.

Caveats and clarifications are identified in the *Comments* column.

2.2.1 Interface Capabilities Supported

The Yealink SIP-TxP/T3xG has completed interoperability testing with BroadWorks using the *BroadWorks SIP Access Device Interoperability Test Plan* [4]. The results are summarized in the following table.

The BroadWorks test plan is composed of packages, each covering distinct interoperability areas, such as “Basic” call scenarios and “Redundancy” scenarios. Each package is composed of one or more test items, which in turn, are composed of one or more test cases. The test plan exercises the SIP interface between the device and BroadWorks with the intent to ensure interoperability sufficient to support the BroadWorks feature set.

NOTE: *DUT* in the following table refers to the *Device Under Test*, which in this case is the Yealink SIP-TxP/T3xG.

BroadWorks SIP Access Device Interoperability Test Plan Support Table			
Test Plan Package	Test Plan Package Items	Supported	Comments
Basic	Call Origination	Yes	
	Call Termination	Yes	
	Session Audit	Yes	
	Session Timer	Yes	
	Ringback	Yes	
	Forked Dialog	Yes	
	Early UPDATE	No	
	Early-Session	No	
	181 Call Being Forwarded	Yes	
	Dial Plan	Yes	
	Dual-Tone Multi-Frequency (DTMF) – Inband	Yes	
	DTMF – RFC 2833	Yes	
	DTMF – DTMF Relay	Yes	
	Codec Negotiation	Yes	
	Codec Renegotiation	Yes	
BroadWorks Services	Third-Party Call Control – Basic	NA	
	Third-Party Call Control – Advanced	Yes	
	Voice Message Deposit or Retrieval	Yes	
	Message Waiting Indicator	Yes	
	Voice Portal Outcall	Yes	
	Advanced Alerting	Yes	

BroadWorks SIP Access Device Interoperability Test Plan Support Table

Test Plan Package	Test Plan Package Items	Supported	Comments
	Calling Line ID	Yes	
	Calling Line ID with Unicode Characters	Yes	
	Connected Line ID	Yes	
	Connected Line ID with Unicode Characters	Yes	
	Connected Line ID on UPDATE	Yes	
	Connected Line ID on Re-INVITE	Yes	
	Diversion Header	Yes	
	History-Info Header	Yes	
	Advice of Charge	No	
	Meet-Me Conferencing	Yes	
DUT Services – Call Control Services	Call Waiting	Yes	
	Call Hold	Yes	
	Call Transfer	Yes	
	Three-Way Calling	Yes	
	Network-Based Conference	Yes	
DUT Services – Registration and Authentication	Register Authentication	Yes	
	Maximum Registration	Yes	
	Minimum Registration	Yes	
	Invite Authentication	Yes	
	Re-Invite or Update Authentication	Yes	
	Refer Authentication	Yes	
	Device Authenticating BroadWorks	No	
DUT Services – Fax	G711 Fax Passthrough	NA	
	G711 Fax Fallback	NA	
	T38 Fax Messaging	NA	
DUT Services – Emergency Call	Emergency Call	No	
	Emergency Call with Ringback	No	
DUT Services – Miscellaneous	Do Not Disturb	Yes	
	Call Forwarding Always	Yes	
	Call Forwarding Always Diversion Inhibitor	Yes	
	Anonymous Call	Yes	
	Anonymous Call Block	Yes	

BroadWorks SIP Access Device Interoperability Test Plan Support Table

Test Plan Package	Test Plan Package Items	Supported	Comments
	Remote Restart Via Notify	Yes	
Advanced Phone Services – Busy Lamp Field	Busy Lamp Field	Yes	Except T19P
	Call Park Notification	Yes	
Advanced Phone Services – Feature Key Synchronization, Private Line	Do Not Disturb	Yes	
	Do Not Disturb Ring Splash	Yes	
	Call Forwarding	Yes	
	Call Forwarding Always Ring Splash	Yes	
	Call Forwarding Always Diversion Inhibitor	Yes	
	Call Center Agent Logon or Logoff	Yes	
	Call Center Agent Unavailable Code	Yes	
Advanced Phone Services – Feature Key Synchronization, Shared Line	Do Not Disturb	Yes	
	Do Not Disturb Ring Splash	Yes	
	Call Forwarding	Yes	
	Call Forwarding Always Ring Splash	Yes	
	Call Forwarding Always Diversion Inhibitor	Yes	
Advanced Phone Services – Missed Calls Display Synchronization	Missed Calls Display Sync	Yes	
Advanced Phone Services – Shared Call Appearance using Call Info	Line-Seize	Yes	
	Call-Info or Lamp Management	Yes	
	Public Hold	Yes	
	Private Hold	Yes	
	Hybrid Key System	Yes	
	Multiple Call Arrangement	Yes	
	Bridging	Yes	
	Call Park Notification	Yes	
Advanced Phone Services – Call Center	Hold Reminder	Yes	
	Call Information	Yes	
	Hoteling Event	Yes	
	Status Event	Yes	
	Disposition Code	Yes	
	Emergency Escalation	Yes	
	Customer Originated Trace	Yes	
Advanced Phone Services – Call Park	Call Park Notification	Yes	

BroadWorks SIP Access Device Interoperability Test Plan Support Table

Test Plan Package	Test Plan Package Items	Supported	Comments
Notification			
Redundancy	Domain Name System (DNS) SRV Lookup	Yes	
	Register Failover or Failback	Yes	
	Invite Failover or Failback	Yes	
	Bye Failover	Yes	
Session Border Controller (SBC)/Application Layer Gateway (ALG)	Register	Yes	
	Outgoing Invite	Yes	
	Incoming Invite	Yes	
Video – Basic Video Calls	Call Origination	NA	
	Call Termination	NA	
	Call Hold	NA	
	Call Waiting	NA	
	Call Transfer	NA	
Video – BroadWorks Video Services	Auto Attendant	NA	
	Auto Attendant – HD	NA	
	Voice Messaging	NA	
	Voice Messaging – HD	NA	
	Custom Ringback	NA	
TCP	Register	Yes	
	Outgoing Invite	Yes	
	Incoming Invite	Yes	
IPV6	Call Origination	NT	
	Call Termination	NT	
	Session Audit	NT	
	Ringback	NT	
	Codec Negotiation or Renegotiation	NT	
	Voice Message Deposit or Retrieval	NT	
	Call Control	NT	
	Registration with Authentication	NT	
	T38 Fax Messaging	NT	
	Busy Lamp Field	NT	
	Redundancy	NT	
	SBC	NT	
	Video	NT	

BroadWorks SIP Access Device Interoperability Test Plan Support Table

Test Plan Package	Test Plan Package Items	Supported	Comments
	Dual Stack with Alternate Connectivity	NT	

2.2.2 Other Interface Capabilities

The Yealink SIP-TxP/T3xG firmware version v71 or above have implemented support for the following:

- BroadWorks Xsi Interface

Refer to the configuration of the below figure, type in the related parameters and confirm it.

The screenshot shows the Yealink T20 web interface. The 'Directory' tab is selected in the top navigation bar. On the left sidebar, 'Network Directory' is highlighted. The main content area shows the 'XSI' configuration page. It includes fields for 'Host Server', 'Port' (set to 80), 'XSI Server Type' (set to HTTP), 'User ID', and 'Password'. Below these are sections for 'Network Directory' and 'Custom Directory'. The 'Network Directory' section has a table with columns 'Type', 'Enable', and 'Display Name'. The 'Custom Directory' section has a checkbox for 'Enable Custom Directory'. A 'Call Log' section is at the bottom. A 'NOTE' box on the right states: 'Network Directory: The network directory parameters for administrator.'

- XMPP (BroadCloud IM&P)

Support for these interfaces is demonstrated by completing the *BroadWorks SIP Phone Functional Test Plan* [4]. Support for these interfaces is summarized in the following table.

BroadWorks Xsi and BroadCloud IM&P Support Table

Interface	Feature	Supported	Comments
Xsi Features – User Service Configuration	Remote Office	Yes	
	BroadWorks Anywhere	Yes	
	Simultaneous Ring	Yes	
	Caller ID Blocking	Yes	
	Call Forward Always	Yes	
	Call Forward Busy	Yes	
	Call Forward No Answer	Yes	
	Do Not Disturb	Yes	
Xsi Features -	Enterprise Directory	Yes	

Directories	Enterprise Common Phone List	Yes	
	Group Directory	Yes	
	Group Common Phone List	Yes	
	Personal Phone List	Yes	
	Search All Directories	Yes	
Xsi Features – Call Logs	Placed Calls	Yes	
	Received Calls	Yes	
	Missed Calls	Yes	
	All Calls	Yes	
	Sort by Name	No	
XMPP Features – Contact/Buddy List	Contacts	No	
	Favorites	No	
	Groups	No	
	Non-XMPP Contacts	No	
	Conferences	No	
XMPP Features - Presence	Login Invisible	No	
	Presence State	No	
	Presence Status	No	
	Contact's Presence State	No	

2.3 Known Issues

This section lists the known interoperability issues between BroadWorks and specific partner release(s). Issues identified during interoperability testing and known issues identified in the field are listed.

The following table provides a description of each issue and, where possible, identifies a workaround. The verified partner device versions are listed with an “X” indicating that the issue occurs in the specific release. The issues identified are device deficiencies or bugs, and are typically not BroadWorks release dependent.

If the testing was performed by BroadSoft, then the *Issue Number* is a BroadSoft ExtraView partner issue number. If the testing was performed by the partner or a third party, then the partner may or may not supply a tracking number.

For more information on any issues related to the particular partner device release, see the partner release notes.

Issue Number	Issue Description	Partner Version			
		X.0.0.9	X.51.0.10	X.70.X.X	X.71.X.X
	Device Management – file download fails if Xtended		X		

	Services Platform generates HTTP 302. The T2xP fails to download configuration files and firmware via the Xtended Services Platform if the Xtended Services Platform responds to the http get with a 302 redirect. This occurs in Xtended Services Platform farm scenarios and other scenarios in which the URL changes. Workaround: No workaround. This issue is resolved in T2xP version x.51.0.17.				
	Device Management – file download fails if T2xP upgrade URL is configured as an FQDN. The T2xP fails to download configuration files and firmware via the Xtended Services Platform if the phone's upgrade URL is configured as an FQDN. Workaround: Ensure the upgrade URL is configured as an IP address. This issue is resolved in T2xP version x.51.0.21.		X		

3 BroadWorks Configuration

This section identifies the required BroadWorks device profile type for the Yealink SIP-TxP/T3xG as well as any other unique BroadWorks configuration required for interoperability with the SIP-TxP/T3xG.

3.1 BroadWorks Device Profile Type Configuration

This section identifies the device profile to use when deploying the Yealink SIP-TxP/T3xG with BroadWorks.

The following table identifies the required BroadWorks device identity/profile settings for interoperability between the SIP-TxP/T3xG and BroadWorks. For an explanation of the profile parameters, see the *BroadWorks Device Management Configuration Guide* [2].

For most of the following parameters, an “X” indicates that the parameter function is supported and/or required. If the item is blank, it is not supported. For items where text is supplied, the text content maps directly to the web page to add or to modify a device profile type.

Yealink SIP-TxP/T3xG Identity/Device Profile Type	
Signaling Address Type	Intelligent Proxy Addressing
Standard Options	
Number of Ports	T19P: 1 T20P: 2 T21P: 2 T22P: 3 T26P: 3 T28P: 6 T32P: 3 T38P: 6
Ringback Tone or Early Media Support	Local Ringback – No Early Media
Authentication	Enabled
Hold Normalization	Inactive
Registration Capable	X
Static Registration Capable	
E.164 Capable	
Trusted	
Authenticate REFER	
Video Capable	
Use History-Info Header	
Advanced Options	
Route Advance	
Wireless Integration	
PBX Integration	

Yealink SIP-TxP/T3xG Identity/Device Profile Type	
Add P-Called-Party-ID	
Auto Configuration Soft Client	
Requires BroadWorks Call Waiting Tone	
Advice of Charge Capable	
Support Emergency Disconnect Control	
Enable Monitoring	
Static Line/Port Ordering	
Forwarding Override	
Conference Device	
Music On Hold Device	
Requires BroadWorks Digit Collection	
Requires MWI Subscription	
Support Call Center MIME Type	
Support Identity in UPDATE and Re-INVITE	
Support RFC 3398	
Reset Event	checkSync
Trunk Mode	User
Hold Announcement Method	Inactive
Unscreened Presentation Identity Policy	Profile
Web Based Configuration URL Extension	
Device Configuration Options	
Device Configuration Options	Device Management

3.2 BroadWorks Configuration Steps

No other steps are needed on BroadWorks for setting up the device.

The capabilities of the SIP-TxP/T3xG have been verified for use with BroadWorks based on the settings described in the following table. For more information on the meaning, purpose, and applicability of the individual configuration items see the *Yealink TxP SIP Phone User Manual* [1].

Configuration Files

Files Provided by Partner	Level	Description
y00000000000<xx>.cfg	system configuration file	“y00000000000xx.cfg”, where “xx” associated with the hardware version of Yealink Device, that is, y000000000000.cfg for Yealink SIPT28P.
<MACADDRESS>.cfg	device-specific configuration file	

4.1 System Level Configuration

This section describes system-wide configuration items that are generally required for each SIP-TxP/T3xG to work with BroadWorks. Subscriber-specific settings are described in the next section.

Step	Command	Purpose
System Configuration Items y0000000000<xx>.cfg		
Step 1	Set SIP Proxy/Domain. (Only for the firmware version lower than V71) <pre>SIPServerHost = as.broadworks.net SIPServerPort = 5060</pre> (Only for the V71 and higher version) <pre>account.x.sip_server_host = as.broadworks.net account.x.sip_server_port = 5060</pre>	Set the SIP-TxP/T3xG series SIP server to the Fully Qualified Domain Name (FQDN) for the BroadWorks Application Server cluster. The domain must match the domain configured for the BroadWorks subscriber's line/port domain. **'x' should be replaced with the line port number that is to be configured.
Step 2	Set Outbound Proxy. (Only for the firmware version lower than V71) <pre>UseOutboundProxy = 1</pre>	Set the Outbound Proxy to the session border controller (SBC) if one is deployed between the SIP-TxP/T3xG series and BroadWorks. If there are redundant SBCs, set it to

Step	Command	Purpose
System Configuration Items y0000000000<xx>.cfg		
	<pre> OutboundHost = sbc.broadworks.net OutboundPort = 5060 (Only for the V71 and higher version) account.x.outbound_proxy_enable = 1 account.x.outbound_host = sbc.broadworks.net account.x.outbound_port =5060 </pre>	the FQDN for the SBC cluster. ***'x' should be replaced with the line port number that is to be configured.
Step 3	<pre> Set SIP Timers. (Only for the firmware version lower than V71) default_t1 = 0.5 default_t2 = 4 default_t3 = 5 (Only for the V71 and higher version) account.x.advanced.timer_t1 = 0.5 account.x.advanced.timer_t2 = 4 account.x.advanced.timer_t4 =5 </pre>	The SIP timers should be set to levels short enough to support a timely failover when there is no server response. ***'x' should be replaced with the line port number that is to be configured.
Step 4	<pre> Set Register Expire Timer. (Only for the firmware version lower than V71) Expire = 3600 (Only for the V71 and higher version) account.x.expires = 3600 </pre>	Set the registration period. ***'x' should be replaced with the line port number that is to be configured.
Step 5	<pre> Enable reliable response. (Only for the firmware version lower than V71) Enable 100Rel = 1 (Only for the V71 and higher version) account.x.100rel_enable =1 </pre>	Reliable provisional response (PRACK) should be enabled. ***'x' should be replaced with the line port number that is to be configured.
Step 6	<pre> Enable Session Timer. (Only for the firmware version lower than V71) EnableSessionTimer = 1 SessionExpires = 300 SessionRefresher = 1 (Only for the V71 and higher version) </pre>	Set the SIP-TxP/T3xG series to enable Session Timer. Session Refresher: 0: uac 1: uas ***'x' should be replaced with the line port number that is to be configured.

Step	Command	Purpose
System Configuration Items y0000000000<xx>.cfg		
	version) account.x.session_timer.enable = 1 account.x.session_timer.expires = 300 account.x.session timer.refresher =1	
Step 7	Enable Call Waiting. (Only for the firmware version lower than V71) Call_Waiting = 1 (Only for the V71 and higher version) call_waiting.enable = 1	Set the SIP-TxP/T3xG series to enable Call Waiting and Call Waiting Tone.
Step 8	Enable MWI. (Only for the firmware version lower than V71) SubscribeMWI = 0 SubscribeMWIExpire = 3600 (Only for the V71 and higher version) account.1.subscribe_mwi = 0 account.1.subscribe_mwi_expires =3600	MWI: Solicited when setting SubscribeMWI = 1. MWI: Not solicited when setting SubscribeMWI = 0.
Step 9	Enable negotiated DTMF type. (Only for the firmware version lower than V71) DTMFInbandTransfer = 1 (Only for the V71 and higher version) features.dtmf.transfer =	Set the SIP-T2P/T3xG series to enable inband or RFC 2833 negotiated DTMF.
Step 10	Select Transport Type. (Only for the firmware version lower than V71) Transport = 0 (Only for the V71 and higher version) account.x.transport = 0	Set the SIP transport: Transport = 0 (UDP) Transport = 1 (TCP) Transport = 2 (TLS) Transport = 3 (DNS-SRV) ***'x' should be replaced with the line port number that is to be configured.
Step 11	Enable Feature Key Sync. (Only for the firmware version lower than V71)	Enable Feature Key Sync: 1: Enable 0: Disable

Step	Command	Purpose
System Configuration Items y0000000000<xx>.cfg		
	(Only for the firmware version lower than V71) BroadsoftFeatureKeySync = 1 (Only for the V71 and higher version) bw.feature_key_sync = 1	

4.2 Subscriber Level Configuration Parameters

This section identifies the device-specific parameters, including registration and authentication. These settings must be unique across devices to be matched with the settings for a BroadWorks subscriber.

Provisioning a subscriber to register with BroadWorks allows calls to terminate to the subscriber's line. Registration requires that a unique address of record (AoR) is provisioned on BroadWorks and the phone; provisioning an AoR on BroadWorks consists of setting the line/port parameter to a unique value within the Application Server cluster.

Step	Command	Purpose
Subscriber parameters for the <MACADDRESS>.cfg		
Step 1	Enable a line to be used. Example: (Only for the firmware version lower than V71) Enable = 1 (Only for the V71 and higher version) account.x.enable = 1	Enable a line of the SIP-TxP/T3xG series to be used. **'x' should be replaced with the line port number that is to be configured.
Step 2	Configure display name for a line. Example: (Only for the firmware version lower than V71) DisplayName = Joe (Only for the V71 and higher version) account.x.display_name = Joe	For the line, configure the name to be displayed on the device. **'x' should be replaced with the line port number that is to be configured.

Step	Command	Purpose
Subscriber parameters for the <MACADDRESS>.cfg		
Step 3	Set Register User ID for a line. Example: (Only for the firmware version lower than V71) <pre>UserName = 2405551111</pre> (Only for the V71 and higher version) <pre>account.x.user_name = 2405551111</pre>	The <i>register user ID</i> must correspond with the line/port setting on BroadWorks. **'x' should be replaced with the line port number that is to be configured.
Step 4	Enable SIP Authentication for a line. Example: (Only for the firmware version lower than V71) <pre>AuthName = 2405551111</pre> <pre>password = 123456</pre> (Only for the V71 and higher version) <pre>account.x.auth_name = 2405551111</pre> <pre>account.x.password = 123456</pre>	If the Authentication service is configured on BroadWorks, these parameters must be configured to match the BroadWorks settings. **'x' should be replaced with the line port number that is to be configured.
Step 5	Configure eventlist BLF for a line. <pre>BLFList_URI = <broadworks-blf-list-uri></pre> Example: (Only for the firmware version lower than V71) <pre>BLFList_URI = myblflist@as.iopl.broadworks.net</pre> (Only for the V71 and higher version) <pre>account.x.blf.blf list uri = myblflist@as.iopl.broadworks.net</pre>	Configure the <i>eventlist</i> busy line field (BLF) on the <i>Account Settings</i> page to match the BroadWorks busy lamp field list URI setting for the user. **'x' should be replaced with the line port number that is to be configured.

Step	Command	Purpose
Subscriber parameters for the <MACADDRESS>.cfg		
Step 6	Configure Network Conference for a line. (Only for the firmware version lower than V71) <pre>conf-type = 2 conf-uri = <broadworks conference uri> Example: conf-uri = conf@as.iopl.broadworks.net</pre> (Only for the V71 and higher version) <pre>account.x.conf_type = 2 account.x.conf_uri = conf@as.iopl.broadworks.net</pre>	Select the <i>Network Conference</i> type and the <i>conference-uri</i> from the <i>Account Settings</i> page. The <i>conference-uri</i> must match the BroadWorks configured <i>conference-uri</i> setting. **'x' should be replaced with the line port number that is to be configured.
Step 7	Configure Network Phonebook for a line. (Only for the firmware version lower than V71) <pre>DisplayName = Broadsoft Phonebook Server = http://xspl.iopl.broad works.net/com.broadsoft.xsi- actions/v1.0/user/2413333610@as.i opl.broadworks.net/directories/ca lllogs/placed Port = 8080 UserName = 2413333601@as.iopl. broadworks.net PassWord = yealink</pre> (V71 supports XSI format, use the configuration below) <pre>account.x.xsi.user = Broadsoft Phonebook account.x.xsi.password = yealink account.x.xsi.host = http://xspl.iopl.broad works.net/ account.x.xsi.server_type =http account.x.xsi.port =8080</pre>	This configures the phone to use the BroadWorks Xsi interface to retrieve the group phone directory. Server: This is the identity of the BroadWorks Xsp server/cluster address and relevant xsi-actions parameters. UserName: This is the BroadWorks user's login name. PassWord: This is the BroadWorks user's login password. **'x' should be replaced with the line port number that is to be configured.

4.3 Advanced SIP Features Configuration

This section provides configuration instructions for advanced SIP features supported by the phone including but not limited to Shared Call Appearance, Busy Lamp Field, Feature Key Synchronization, Call Center, and Emergency Call.

4.3.1 Shared Call Appearance Configuration

The Shared Call Appearance (SCA) feature allows the administrator to add multiple locations to a given line. Any of the locations can be used to originate or receive calls.

When a call comes in to an idle line, all the provisioned locations for that line are alerted. The first location to answer the call is connected to the originator. If the line is already active in a call, only the active location is alerted.

A subscriber can originate calls from any of the configured locations. All other locations are unable to originate calls until all calls are released.

It is recommended that the phone number plus an index (<phoneNumber>_<index>) is used when provisioning the unique address of record (AoR) for each shared line. For example: 2405551111_2. If a phone number does not exist, the MAC address plus an index could be used (<macAddress>_<index>).

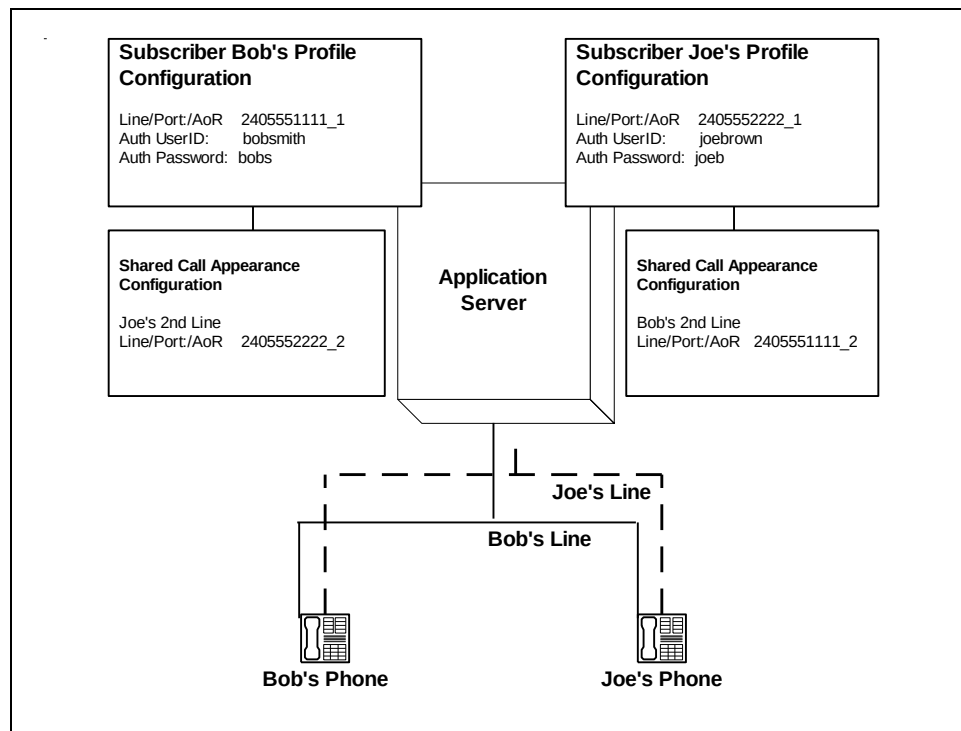


Figure 1 Shared Call Appearance Configuration

Figure 1 Shared Call Appearance Configuration shows that Bob and Joe each have two lines and that Bob shares a line with Joe and Joe shares a line with Bob. The figure also shows the applicable Subscriber Profile and Shared Call Appearance Configuration data for subscribers Bob and Joe.

When Bob (2405551111) is called, Bob's first line and Joe's second line will ring. When Joe (2405552222) is called, Joe's first line and Bob's second line will ring.

The following steps show how to configure both phones for this Shared Call Appearance configuration.

For configurations of SCA for the device, refer to the following example:

4.3.1.1 Bob's Phone Configuration – MAC.cfg

This is the SCA configurations as specified in MAC.cfg, that is, 0015651130dc.cfg where "0015651130dc" is the MAC address of the SIP phone.

The following steps are used to configure line 1 for Bob's phone. This line rings when Bob is called, so it has Bob's authentication information.

Step	Command	Purpose
Step 1	Configure line as shared. (Only for the firmware version lower than V71) ShareLine = 1; (Only for the V71 and higher version) account.1.shared_line =1	Configure the line as "shared" (as opposed to "private").
Step 2	Set Register User ID. Example: (Only for the firmware version lower than V71) UserName = 2405551111_1; (Only for the V71 and higher version) account.1.user_name = 2405551111_1	The register user ID must correspond with the line/port setting on BroadWorks.
Step 3	Enable SIP Authentication. Example: (Only for the firmware version lower than V71) AuthName = bobsmith; password = bobs; (Only for the V71 and higher version) account.1.auth_name = bobsmith account.1.password = bobs	If the Authentication service is configured on BroadWorks, these parameters must be configured to match the BroadWorks settings. This line rings when Bob is called, so it has Bob's authentication information.
Step 4	Configure display name. Example: (Only for the firmware version lower than V71) DisplayName = Bob Smith; (Only for the V71 and higher version) account.1.display_name = Bob Smith	Configure the name to be displayed on the device for this line.

The following steps are used to configure line 2 for Bob's phone. This line rings when Joe is called, so it has Joe's authentication information.

Step	Command	Purpose
Step 1	Configure line as shared. (Only for the firmware version lower than V71) <code>ShareLine = 1;</code> (Only for the V71 and higher version) <code>account.2.shared_line =1</code>	Configure the line as “shared” (as opposed to “private”).
Step 2	Set Register User ID. Example: (Only for the firmware version lower than V71) <code>UserName = 2405551111 2;</code> (Only for the V71 and higher version) <code>account.2.user_name = 2405551111_2</code>	The register user ID must correspond with the line/port setting on BroadWorks.
Step 3	Enable SIP Authentication. Example: (Only for the firmware version lower than V71) <code>AuthName = joebrown;</code> <code>password = joeb;</code> (Only for the V71 and higher version) <code>account.2.auth_name = joebrown</code> <code>account.2.password = joeb</code>	If the Authentication service is configured on BroadWorks, these parameters must be configured to match the BroadWorks settings. This line rings when Joe is called, so it has Joe's authentication information.
Step 4	Configure display name. Example: (Only for the firmware version lower than V71) <code>DisplayName = Joe Brown;</code> (Only for the V71 and higher version) <code>account.2.display_name = Joe Brown</code>	Configure the name to be displayed on the device for this line.

4.3.1.2 Joe's Phone Configuration – MAC.cfg

The following steps are used to configure line 1 for Joe's phone. This line rings when Joe is called, so it has Joe's authentication information.

Step	Command	Purpose
Step 1	Configure line as shared. (Only for the firmware version lower than V71)	Configure the line as “shared” (as opposed to “private”).

	<pre>ShareLine = 1; (Only for the V71 and higher version) account.1.shared_line =1</pre>	
Step 2	Set Register User ID. Example: (Only for the firmware version lower than V71) <pre>UserName = 2405552222_1;</pre> (Only for the V71 and higher version) <pre>account.1.user_name = 2405552222_1</pre>	The register user ID must correspond with the line/port setting on BroadWorks.
Step 3	Enable SIP Authentication. Example: (Only for the firmware version lower than V71) <pre>AuthName = joebrown; password = joe;</pre> (Only for the V71 and higher version) <pre>account.1.auth_name = joebrown account.1.password = joe</pre>	If the Authentication service is configured on BroadWorks, these parameters must be configured to match the BroadWorks settings. This line rings when Joe is called, so it has Joe's authentication information.
Step 4	Configure display name. Example: <pre>DisplayName = Joe Brown;</pre>	Configure the name to be displayed on the device for this line.

The following steps are used to configure line 2 for Joe's phone. This line rings when Bob is called, so it has Bob's authentication information.

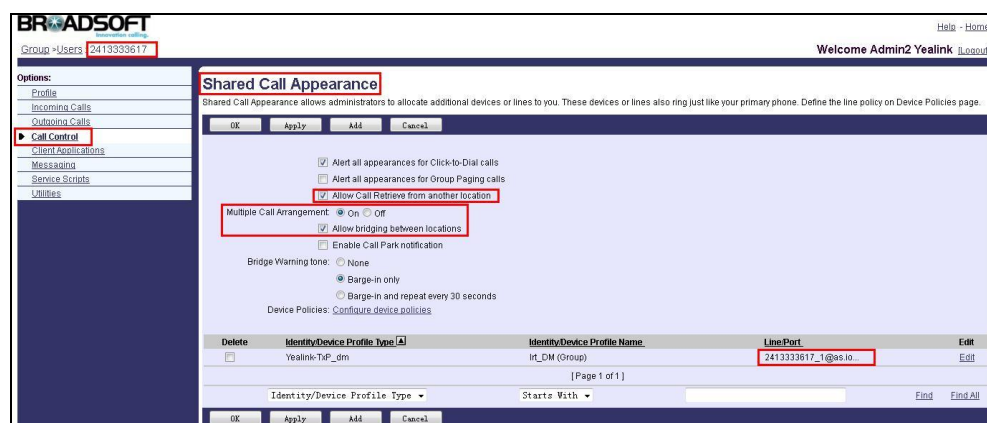
Step	Command	Purpose
Step 1	Configure line as shared. (Only for the firmware version lower than V71) <pre>ShareLine = 1;</pre> (Only for the V71 and higher version) <pre>account.2.shared_line =1</pre>	Configure the line as "shared" (as opposed to "private").
Step 2	Set Register User ID. Example: (Only for the firmware version lower than V71) <pre>UserName = 2405552222_2;</pre> (Only for the V71 and higher	The register user ID must correspond with the line/port setting on BroadWorks.

	<pre>version) account.2.user_name = 2405552222_2</pre>	
Step 3	Enable SIP Authentication. Example: (Only for the firmware version lower than V71) <pre>AuthName = bobsmith; password = bobs;</pre> (Only for the V71 and higher version) <pre>account.2.auth_name = bobsmith account.2.password = bobs</pre>	If the Authentication service is configured on BroadWorks, these parameters must be configured to match the BroadWorks settings. This line rings when Bob is called, so it has Bob's authentication information.
Step 4	Configure display name. Example: (Only for the firmware version lower than V71) <pre>DisplayName = Bob Smith;</pre> (Only for the V71 and higher version) <pre>account.2.display_name = Bob Smith</pre>	Configure the name to be displayed on the device for this line.

4.3.1.3 Hybrid Key System Configuration

Hybrid Key System emulation requires the phone to support assignment of multiple line keys to a single registering line on the phone. It also requires the phone to limit each line key to a single call appearance or provide the configurability to roll a new call over to the next free line key. Any of the locations can be used to originate or receive calls.

Firstly, From the Shared Call Appearance configuration web page, select Add to add a second appearance



Secondly, on the website of the line registration must type in as below
The host line,

Yealink | T28

Log Out

Status Account Network DSSKey Features Settings Directory Security

Register Basic Codec Advanced

Account Account 1

Register Status Disabled

Line Active Enabled ?

Label 3617 ?

Display Name 2413333617 ?

Register Name 2413333617 ?

User Name 2413333617 ?

Password ?

Enable Outbound Proxy Server Enabled ?

Outbound Proxy Server 199.19.193.10 Port 5060 ?

Transport UDP ?

NAT Disabled ?

STUN Server Port 3478 ?

SIP Server 1 ?

Server Host as.lip1.broadworks.net Port 5060 ?

Server Expires 3600 ?

Server Retry Counts 3 ?

SIP Server 2 ?

NOTE

Display Name
SIP service subscriber's name which will be used for Caller ID display.

Register Name
SIP service subscriber's ID used for authentication.

User Name
User account, provided by VoIP service provider.

NAT Traversal
Defines the STUN server will be active or not.

The second appearance line,

Yealink | T28

Log Out

Status Account Network DSSKey Features Settings Directory Security

Register Basic Codec Advanced

Account Account 1

Register Status Disabled

Line Active Enabled ?

Label 3617_1 ?

Display Name 2413333617_1 ?

Register Name 2413333617 ?

User Name 2413333617_1 ?

Password ?

Enable Outbound Proxy Server Enabled ?

Outbound Proxy Server 199.19.193.10 Port 5060 ?

Transport UDP ?

NAT Disabled ?

STUN Server Port 3478 ?

SIP Server 1 ?

Server Host as.lip1.broadworks.net Port 5060 ?

Server Expires 3600 ?

Server Retry Counts 3 ?

SIP Server 2 ?

NOTE

Display Name
SIP service subscriber's name which will be used for Caller ID display.

Register Name
SIP service subscriber's ID used for authentication.

User Name
User account, provided by VoIP service provider.

NAT Traversal
Defines the STUN server will be active or not.

Thirdly, all of the advanced setting of the host and the other appearance line must enable the Broadsoft SCA feature, refer to the figure below,

The path of line setting

Account – Advanced – Shared Line

Shared Line

Broadsoft SCA ?

The following steps are used to assign multiple line keys to Line for Bob's phone.

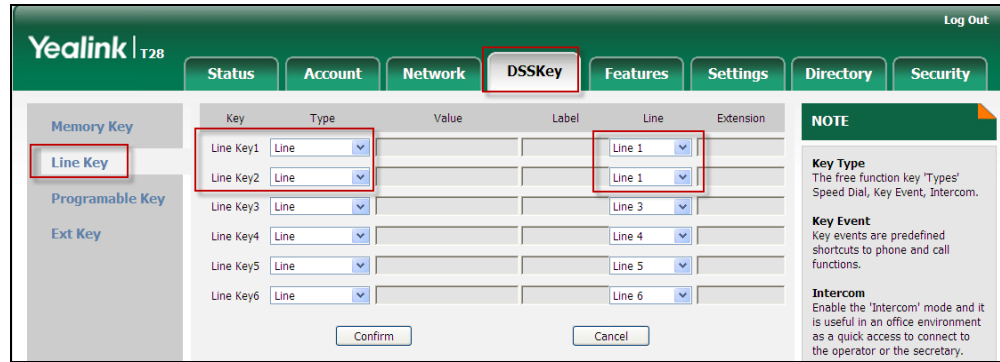
Step	Command	Purpose
------	---------	---------

Step 1	Set DSS Key. Example: linekey.1.type =15 linekey.1.line = 1	Set memory key to line and apply this key type (line) to the shared line. key type: 15-line line ID: 0:line1 1:line1 2:line2 3:line3 4:line4 5:line5 6:line6
Step 2	Set DSS Key. Example: linekey.2.type = 15 linekey.2.line = 1	Set memory key to line and apply this key type (line) to the shared line. key type: 15-line line ID: 0:line1 1:line1 2:line2 3:line3 4:line4 5:line5 6:line6

The following steps are used to assign multiple memory keys to Line for Joe's phone.

Step	Command	Purpose
Step 1	Set DSS Key. Example: linekey.1.type = 15 linekey.1.line = 1	Set memory key to line and apply this key type (line) to the shared line. key type: 15-line line ID: 0:line1 1:line1 2:line2 3:line3 4:line4 5:line5 6:line6

The linekey setting of the webpage refers to the figure below

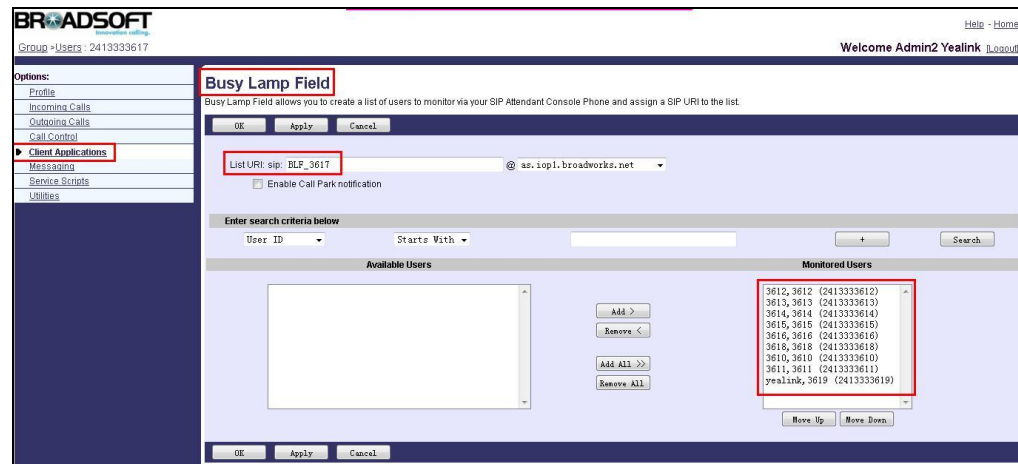


4.3.2 Busy Lamp Field Configuration

The Busy Lamp Field implementation provides an attendant console function. Configuration of the phone to enable Busy Lamp Field is described as follows.

Step	Command	Purpose
Step 1	Set the BLF List URI for the line. Example: account.1.blf.blf_list_uri = MyBLFList@BroadWorks.com	The BLF List URI must be configured to match the BroadWorks settings.

On the Broadworks server configure as below



The configure path of the website:

Account—Advanced—BLF List URI/ BLF List Code/ BLF List Barge In Code

Refer to the figure below:

BLF List URI	BLF_3617@as.ip01.broadw...	?
Blf List Code		?
Blf List Barge In Code		?

Other related autop parameters

Parameter	Value	Purpose
-----------	-------	---------

bw.directory_enable	0 1	Enable BSFT feature. 0 : Disabled 1 : Enable
account.X.blf_list_code =	String	*98 (For example)
phone_setting.auto_blf_list_enable	0 1	Enable or disable auto blf list. 0 : Disabled 1 : Enabled (Default)
phone_setting.blf_list_sequence_type	0 1	Configure the priority of auto blf list. 0 : linekey,memory,exp (Default). 1 : Exp,memory,linekey.

4.3.3 Feature Key Synchronization Configuration

Feature Key Synchronization provides synchronization of phone services such as *Call Forwarding* and *Do Not Disturb* with the settings on BroadWorks for the analogous services. Configuration of the phone to enable Feature Key Synchronization is described as follows.

Step	Command	Purpose
Step 1	Enable Feature Key Synchronization. Example: bw.feature_key_sync = 1	Enable Feature Key Synchronization feature. 0 : Disabled 1 : Enable

The configure path of the website:

Features—General Information—Features Key Synchronization (Enabled)

The screenshot shows the Yealink T28 web interface. The top navigation bar includes 'Status', 'Account', 'Network', 'DSSKey', 'Features' (highlighted with a red box), 'Settings', 'Directory', and 'Security'. On the left sidebar, 'Forward&DND' is expanded, and 'General Information' is highlighted with a red box. The main content area shows the 'General Information' section with various settings. The 'Feature Key Synchronization' setting is highlighted with a red box and is set to 'Enabled'. Other settings include 'Call Waiting' (Enabled), 'Call Waiting On Code', 'Call Waiting Off Code', 'Auto Redial' (Disabled), 'Auto Redial Interval (1~300s)' (10), 'Auto Redial Times (1~300)' (10), 'Key As Send' (#), 'Reserve # in User Name' (Enabled), 'Hotline Number', 'Hotline Delay (0~10s)' (4), 'Busy Tone Delay (Seconds)' (0), 'Return Code When Refuse' (486 (Busy Here)), 'Return Code When DND' (480 (Temporarily Not Av)), 'Call Completion' (Disabled), and 'Time-Out For Dial-Now Rule' (1). A 'NOTE' section on the right provides information about 'Call Waiting', 'Key As Send', and 'Hotline Number'.

4.3.4 Call Center Feature Configuration

This section provides configuration instructions to configure the phone to enable integration with BroadWorks Call Center features including, but not limited to, call information, hoteling, status, and disposition codes. The call center feature is supported with firmware v71 or above.

1. The Configuration of the server:

2. Register the call center line on the website

3. Choose the SIP Server Type as Broadsoft on the advanced path of the account page

4. Refer to the related autop parameters to config the call center features listed below

Parameter	Value	Description/Notes
account.X.acd.enable = 1	0	Enable or disable ACD feature for Account X;
	1	0 : Disabled (default)
		1 : Enabled

account.X.call_center.call_info_enable = 1	0 1	Enable or disable the call center call information feature; 0:Disabled (default) 1:Enabled
account.X.call_center.show_call_info_time =	Number	Specify the duration (in seconds) that the phone displays the call center call information. The default value is 30 seconds
account.X.call_center.queue_status_enable = 1	0 1	Enable or disable the call center queue status notification feature; 0:Disabled (default), 1:Enabled
account.X.call_center.queue_status_light_enable = 1	0 1	Enable or disable the power indicator LED to indicate the queue status; 0:Disabled (default) 1:Enabled
account.X.call_center.display_code_enable = 1	0 1	Enable or disable the call center disposition code feature; 0:Disabled (default) 1:Enabled
account.X.bw_disp_code.Y =	Number	Specify the call center disposition code for account X.Y must be continuous and ranges from 1 to 100
account.X.bw_disp_code_name.Y =	String	Specify the disposition name for account X
account.X.call_center.trace_enable = 1	0 1	Enable or disable the call center customer originated trace feature; 0:Disabled (default) 1:Enabled
account.X.call_center.emergency_enable = 1	0 1	Enable or disable the call center emergency escalation feature; 0:Disabled (default) 1:Enabled
account.X.supervisor_info_code.Y =	String	Specify the call center supervisor code for account X. The maximum length of the value is 30 characters
account.X.supervisor_info_code_name.Y =	String	Specify the supervisor name for account X. The maximum length of the value is 99 characters
account.X.acd.unavailable_reason_enable = 1	0 1	Enable or disable the call center unavailable reason code feature; 0:Disabled (default) 1:Enabled

account.X.reason_code.Y =	String	Specify the call center unavailable code for account X. The maximum length of the value is 10 characters
account.X.reason_code_name.Y =	String	Specify the call center unavailable reason for account X. The maximum length of the value is 40 characters
account.X.hoteling.enable = 1	0 1	Enable or disable the hoteling feature for account X; 0:Disabled (default) 1:Enabled

4.4 Xtended Services Interface (Xsi) Feature Configuration

This section applies to SIP phones, soft clients, and other devices that provide a user interface.

The configuration path of the website:

Directory—Network Directory--XSI

Type in the related parameters and confirm it.

The screenshot shows the Yealink T28 web interface. The top navigation bar includes Status, Account, Network, DSSKey, Features, Settings, Directory (highlighted), and Security. The left sidebar lists Local Directory, Remote Phone Book, Phone Call Info, LDAP, Network Directory (highlighted), Multicast IP, and Setting. The main content area is titled 'XSI' and contains the following configuration fields:

- Host Server: [Text Field]
- Port: 80
- XSI Server Type: HTTP (dropdown)
- User ID: [Text Field]
- Password: [Text Field]
- Network Directory**

Type	Enable	Display Name
Group	Enabled	Group
Enterprise	Disabled	Enterprise
Group Common	Disabled	GroupCommon
Enterprise Common	Disabled	EnterpriseCommon
Personal	Enabled	Personal
- Custom Directory**
 - Enable Custom Directory: Disabled (dropdown)
- Call Log**
 - Network Call Log: Enabled (dropdown)

At the bottom are 'Confirm' and 'Cancel' buttons. A footer note reads: 'Copyright © 1998-2012 **Inc., All Rights Reserved'. A 'NOTE' box on the right states: 'Network Directory: The network directory parameters for administrator.'

This section provides configuration instructions for configuration of Xtended Services Interface features supported by the phone, including but not limited to, BroadWorks Directory and BroadWorks Call Logs.

Call Logs configuration

Yealink T28 Log Out

Status Account Network DSSKey Features Settings **Directory** Security

Local Directory
Remote Phone Book
Phone Call Info
LDAP
Network Directory
Multicast IP
Setting

XSI
Host Server:
Port: 80
XSI Server Type: HTTP
User ID:
Password:

Network Directory

Type	Enable	Display Name
Group	Enabled	Group
Enterprise	Disabled	Enterprise
Group Common	Disabled	GroupCommon
Enterprise Common	Disabled	EnterpriseCommon
Personal	Enabled	Personal

Custom Directory
Enable Custom Directory: Disabled

Call Log
Network Call Log: Enabled

Confirm Cancel

NOTE
Network Directory
The network directory parameters for administrator.

4.4.1 BroadWorks User Service Configuration

Integration with the BroadWorks Xtended Services Interface for User Service Configuration enables the phone to display and configure BroadWorks user services such as Remote Office, BroadWorks Anywhere, Call Forwarding, and Simultaneous Ring. To enable user service configuration, follow the instructions below.

Step	Command	Purpose
Step 1	account.1.xsi.user= account.1.xsi.password = Example: account.1.xsi.user= 2405551111 account.1.xsi.password = 123456	Set the Xsi login user name and password for line 1.
Step 2	account.1.xsi.host = Example: account.1.xsi.host =xsp1.iop1.broadworks.net	Set the IP address or domain name of the XSP server.
Step 3	account.1.xsi.server_type = Example: account.1.xsi.server_type =http	Set the transport type for Xsi.
Step 4	account.1.xsi.port = Example: account.1.xsi.port =80	Set the transport port for Xsi

4.4.2 BroadWorks Directory Configuration

Integration with the BroadWorks Xtended Services Interface for Directories enables the phone to download personal, group, and enterprise directories from BroadWorks and make them available to a user via the phone menus. To enable this feature, follow the instructions below.

Step	Command	Purpose
------	---------	---------

Step 1	Enable the group directory to be displayed on the IP phone Example: <code>bw_phonebook.group_enable = 1</code>	Enable the group directory to be displayed on the IP phone. 0:Disable 1:Enable
Step 2	Configure the group directory name displayed on the IP phone Example: <code>bw_phonebook.group_displayname = Group</code>	Configure <i>Group</i> as the group directory name displayed on the IP phone. The default value is Group.
Step 3	Configure the group common directory to be displayed on the IP phone Example: <code>bw_phonebook.group_common_enable = 1</code>	Enable the group common directory to be displayed on the IP phone. 0:Disable 1:Enable
Step 4	Configure the group common directory name displayed on the IP phone Example: <code>bw_phonebook.group_common_displayname = GroupCommon</code>	Configure <i>GroupCommon</i> as the group common directory name displayed on the IP phone. The default value is GroupCommon.
Step 5	Configure the enterprise directory to be displayed on the IP phone. Example: <code>bw_phonebook.enterprise_enable = 1</code>	Enable the enterprise directory to be displayed on the IP phone. 0:Disabled 1:Enabled
Step 6	Configure the enterprise directory name displayed on the IP phone. Example: <code>bw_phonebook.enterprise_displayname = Enterprise</code>	Configure <i>Enterprise</i> as the enterprise directory name displayed on the IP phone. The default value is Enterprise.
Step 7	Enable the enterprise common directory to be displayed on the IP phone. Example: <code>bw_phonebook.enterprise_common_enable = 1</code>	Enable the enterprise common directory to be displayed on the IP phone. 0:Disabled 1:Enabled
Step 8	Configure the enterprise common directory name displayed on the IP phone. Example: <code>bw_phonebook.enterprise_common_displayname = EnterpriseCommon</code>	Configure <i>EnterpriseCommon</i> as the enterprise common directory name displayed on the IP phone. The default value is EnterpriseCommon.
Step 9	Enable the personal directory to be displayed on the IP phone. Example: <code>bw_phonebook.personal_enable = 1</code>	Enable the personal directory to be displayed on the IP phone. 0:Disable 1:Enable
Step 10	Configure the personal directory name displayed on the IP phone. <code>bw_phonebook.personal_displayname = Personal</code>	Configure <i>Personal</i> as the personal directory name displayed on the IP phone. The default value is Personal.
Step 11	Enable the custom directory feature. Example: <code>bw_phonebook.custom = 1</code>	Enable the custom directory feature. 0:Disable 1:Enable

4.4.3 BroadWorks Call Logs Configuration

Integration with the BroadWorks Xtended Services Interface for Call Logs enables the phone to get call log history (missed, placed, and received calls) from BroadWorks and make them available to a user via the phone menus.

Step	Command	Purpose
------	---------	---------

Step 1	Enable the BroadSoft call log feature. Example: bw_phonebook.call_log_enable = 1	Enable BroadWorks call log feature. 0:Disable 1:Enable
--------	--	--

Configuration on the phone webpage, following the figure below

4.4.4 BroadWorks Call Park Configuration

Integration with the BroadWorks Xtended Services Interface for Call Park makes call park available to a user via the phone menus. To enable this feature, use the following instructions.

Step	Command	Purpose
Step 1	Enable call park feature for the line. Example: account.1.callpark_enable= 1	Enable call park feature. 0:Disable 1: Enable
Step 2	Enable the phone to display the Park soft key during a call. Example: call_park.enable = 1	The Park soft key appears on the LCD screen during a call. 0:Disable 1:Enable
Step 3	Enable the phone to display the GPark soft key during a call. Example: call_park.group_enable= 1	The GPark soft key appears on the LCD screen during a call. 0:Disable 1: Enable
Step 4	Enable the phone to play a warning tone when a call is parked against its line. Example: call_park.park_ring = 1	Enable the phone to play a warning tone when a call is parked against its line. 0:Disable 1: Enable

Step 5

Enable the phone to display a parked indicator when a call is parked against its line.

Example:

`call_park.park_visual_notify_enable = 1`

Enable the phone to display a parked indicator when a call is parked against its line.

0:Disable

1: Enable

Configuration on the phone webpage, following the figure below

4.5 Instant Message and Presence Configuration

This section applies to SIP phones, soft clients, and other devices that provide a user interface.

[Note] Only the T38G customized version supports this feature, so if you need this special feature, please contact our support team by the email, support@yealink.com

Firstly, Enabled the UC Active function by the follow autop statement

`features.uc_enable = 1` (1 – Enabled, 0 – Disabled)

The other two autop configuration statements,

`features.uc_username =` (The uc username)

`features.uc_password =` (The uc password)

Secondly, following the path of phone's webpage

Phone -- Features -- Auto Call Distribution Settings, filled in the associated parameter

UC Username and UC Password

Refer to the figure below,

Yealink Logout

Status Account Network DSS Key **Phone** Contacts Security

Preference
Features
 Upgrade
 Auto Provision
 Configuration
 Dial Plan
 Voice
 Ring
 Tones
 SMS
 Action URL
 Softkey Layout

☐ Forward ?

Always ☐ On ☒ Off
 Target 303 ?

Busy ☐ On ☒ Off
 Target 304 ?

No Answer ☐ On ☒ Off
 After Ring Time (seconds) 60 ?
 Target 305 ?

+ Do Not Disturb
 + General Information
 + Audio Settings
 + Intercom Settings
 + Transfer Settings
 + Call Pickup
 + Remote Control Security
 + Phone Lock
 + Auto Call Distribution Settings

UC Username
 UC Password

NOTE

Forward
 This feature allows you to forward an incoming call to another phone number.

Target
 The number to which the incoming calls will be forwarded.

On Code
 The code that will be sent to PBX when it is switched On.

Off Code
 The code that will be sent to PBX when it is switched Off.

Call Waiting
 This call feature allows your phone to accept other incoming calls during the conversation.

Key As Send
 Select * or # as the send key.

Hotline Number
 When you pick up the phone, it will dial out the hotline number automatically.

5 Device Management

The BroadWorks Device Management feature provides the capability to automate generation of device configuration files to support mass deployment of devices. This section identifies the device management capabilities supported by the Yealink SIP-TxP/T3xG and the configuration steps required. For Device Management configuration details not covered here, refer to the *BroadWorks Device Management Configuration Guide* [错误!未找到引用源。](#).

The basic steps to integrate a device with Device Management are as follows:

- 1) Create device template files for the device with the appropriate BroadWorks Device Management tags.
- 2) Define custom and system tags and add them to the *device template* files. Note that these custom and system tags must also be defined on BroadWorks.
- 3) Create a device profile type on BroadWorks for each device model to be integrated with Device Management.
- 4) Add the device template files and other associated files to the device profile type.
- 5) Create a device profile instance of the device profile type and assign it to a user. A user name and password are assigned to this device profile.
- 6) The end device is configured with the Device Management URL for device files, as well as the user name/password access credentials.

This section describes the steps to integrate the Yealink SIP-TxP/T3xG phones.

As part of the Yealink SIP-TxP/T3xG CPE kit, BroadSoft has defined a standard device configuration in the device template files that service providers can use on their systems. These files can be uploaded directly to Device Management without modification. However, the service provider also has the option to modify these template files as required to fit their deployment needs.

The CPE kit also includes tools to help automate the integration effort. For releases after Release 17.0, there is a Device Management import/export utility. The CPE kit contains DTAF files that can be used to import the device type and template files.

5.1 Device Management Capabilities Supported

The Yealink SIP-TxP/T3xG has completed Device Management interoperability testing with BroadWorks using the *BroadWorks Device Management Interoperability Test Plan* [错误!未找到引用源。](#). The results are summarized in the following table.

The BroadWorks test plan is composed of packages, each covering distinct interoperability areas. Each package is composed of one or more test items, which in turn are composed of one or more test cases. The test plan exercises the Device Management interface between the device and BroadWorks with the intent to ensure interoperability.

The *Supported* column in the following table identifies the Yealink SIP-TxP/T3xG's support for each of the items covered in the test plan packages, with the following designations:

- Yes Test item is supported.
- No Test item is not supported.
- NA Test item is not applicable.
- NT Test item was not tested.

Caveats or clarifications are identified in the *Comments* column.

NOTE: *DUT* in the following table refers to the *Device Under Test*, which in this case is the Yealink SIP-TxP/T3xG.

BroadWorks Device Management Interoperability Test Plan Support Table			
Test Plan Package	Test Plan Package Items	Supported	Comments
HTTP File Download	HTTP Download Using Xtended Services Platform (Xsp) IP Address	Yes	
	HTTP Download Using Xtended Services Platform FQDN	Yes	
	HTTP Download Using Xtended Services Platform Cluster FQDN	Yes	
	HTTP Download With Double Slash	Yes	
HTTPS File Download	HTTPS Download Using Xtended Services Platform IP Address	Yes	
	HTTPS Download Using Xtended Services Platform FQDN	Yes	
	HTTPS Download Using Xtended Services Platform Cluster FQDN	Yes	
File Inspection	Inspect System Config File	Yes	
	Inspect Device-Specific Config File	Yes	
	Inspect Other Config Files	Yes	
	Inspect Static Files	Yes	
Device Inspection	Inspect SIP Settings	Yes	
	Inspect Line Settings	Yes	
	Inspect Service Settings	Yes	
HTTP File Upload	HTTP Upload Using Xtended Services Platform IP Address	No	
	HTTP Upload Using Xtended Services Platform FQDN	No	
	HTTP Upload Using Xtended Services Platform Cluster FQDN	No	
Call Processing Sanity Tests	Register with Authentication	Yes	
	Call Origination	Yes	
	Call Termination	Yes	
	Remote Restart	Yes	
	Shared Line Origination	Yes	
	Shared Line Termination	Yes	
	Shared Line Status	Yes	
	Busy Lamp Field	Yes	Except T19P

BroadWorks Device Management Interoperability Test Plan Support Table

Test Plan Package	Test Plan Package Items	Supported	Comments
	Network-Based Conference	Yes	

5.2 Device Management Configuration

This section identifies the steps required to enable the Yealink SIP-TxP/T3xG phones for device management. For Device Management configuration details not covered here, refer to the *BroadWorks Device Management Configuration Guide* [2].

5.2.1 Configure BroadWorks Tags

The template files in Device Management use tags to represent the data stored on BroadWorks. When a configuration changes for a user, Device Management parses the template files and replaces the Device Management tags with the associated data stored on BroadWorks. There are default tags defined in the Device Management software and there are custom tags that the service provider can create/define via the web portal for use by Device Management. There are two types of custom tags that can be defined: system-default tags are common to all phones on the system; device-type-specific tags are common to Yealink phone models only.

The Yealink SIP-TxP/T3xG makes use of dynamic tags, which may be configured by a BroadWorks administrator as either system default or device type specific tags. This section identifies the required tags.

5.2.1.1 Create System Default Tags

Browse to *System → Resources → Device Management Tag Sets* and select the *System Default* tag set. Yealink configuration templates make use of the tags in the following table. Add the tags if they do not already exist.

Tag Name	Valid Settings	Description
%SNTP_SERVER_1%	IP address/FQDN	Network Time Protocol (NTP) server address.
%SNTP_SERVER_2%	IP address/FQDN	NTP server address alternate.
%DNS_SERVER_1%	IP address	DNS server address.
%DNS_SERVER_2%	IP address	DNS server address alternate.
%SBC_ADDRESS%	IP address/FQDN	SBC SIP address.
%SBC_PORT%	Port	SBC SIP port. The port should be set if the defined SBC address is an IP address. If the SBC address is an FQDN, the SBC port should be left unset.
%USE_SBC_BOOLEAN%	0/1	Use SBC: 1=yes, 0=no.

Example System Default Tag Settings

System Welcome Default Administrator [Logout](#)

Options:

- [Profile](#)
- [Resources](#)
- [Services](#)
- [Communication Barring](#)
- [Utilities](#)

Device Management Tag Sets Modify

Display all the device management tags defined in the tag set. Tags can be added to the set or deleted from the set.

OK Apply Add Cancel

Tag Set: System Default

Delete	Tag Name ▲	Tag Value	Edit
☐	%APPLICATION_DOMAIN%	as.iop1.broadworks.net	Edit
☐	%DNS_SERVER_1%	199.19.193.12	Edit
☐	%DNS_SERVER_2%	199.19.193.39	Edit
☐	%DNS_SERVER%	199.19.193.12	Edit
☐	%SBC_ADDRESS%	sbc1.iop1.broadworks.net	Edit
☐	%SBC_PORT%	5060	Edit
☐	%SNTP_SERVER_1%	time-a.nist.gov	Edit
☐	%SNTP_SERVER_2%	time-b.nist.gov	Edit
☐	%SNTP_SERVER%	time-b.nist.gov	Edit
☐	%USE_SBC_BOOLEAN%	1	Edit

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Tag Name ▼ Starts With ▼ [Find](#) [Find All](#)

OK Apply Add Cancel

Figure 2 System Default Tag Settings

5.2.1.2 Create Device Type Specific Tags

Browse to *System* → *Resources* → *Device Management Tag Sets* and click **Add** to add a new tag set. Configure the tag set name using the device name appended by Tags: *Yealink SIP-TxP Tags*. Add the device type-specific tags in the following table to the device tag set. If the tag set already exists, ensure the following tags are defined.

Tag Name	Valid Settings	Description
----------	----------------	-------------

Tag Name	Valid Settings	Description
%COUNTRY%	United States Australia Austria Brazil Belgium China Czech Denmark Finland France Germany Great Britain Greece Hungary Lithuania India Italy Japan Mexico New Zealand Netherlands Norway Portugal Spain Switzerland Sweden Russia Chile Czech ETSI	Identifies country for standard ringtones.
%LANGUAGE%	English Chinese Simplified Chinese Traditional French German Italian Polish Portuguese Turkish Spanish	Web management and phone LCD language. **The Chinese language is supported only on T19P
%T20_FIRMWARE%	9.<x.x.x>.rom Example: 9.71.0.10.rom	T20P FIRMWARE VERSION

Tag Name	Valid Settings	Description
%T21_FIRMWARE%	34.<x.x.x>.rom Example: 34.71.0.60.rom	T21P FIRMWARE VERSION
%T19_FIRMWARE%	31.<x.x.x>.rom Example: 31.71.0.15.rom	T19P FIRMWARE VERSION
%T22_FIRMWARE%	7.<x.x.x>.rom Example: 7.71.0.10.rom	T22P FIRMWARE VERSION
%T26_FIRMWARE%	6.<x.x.x>.rom Example: 6.71.0.10.rom	T26P FIRMWARE VERSION
%T28_FIRMWARE%	2.<x.x.x>.rom Example: 2.71.0.10.rom	T28P FIRMWARE VERSION
%T32_FIRMWARE%	32.<x.x.x>.rom Example: 32.0.0.40.rom	T32G FIRMWARE VERSION
%T38_FIRMWARE%	38.<x.x.x>.rom Example: 38.0.0.40.rom	T38G FIRMWARE VERSION
%TIMEZONENAME%	See Appendix B	Defines the time zone name
%ACD_SYNC_BINARY%	0 1	Enabled or Disabled the ACD function 0 - Disabled 1 - Enabled **This tag is used for v71 or above
http://%BWDEVICEACCESSFQDN%:%BWDEVICEACCESSPORT%/%BWDMSCONTEXT%/%BWDEVICEACCESSURI%	String	Define the autoprovision server url
%BWENTERPRISE-1%	String	Define the bw_phonebook enterprise displayname
%BWGROUP-1%	String	Define the bw_phonebook group displayname
%CALL_WAITING_BINARY%	0 1	Enabled or Disabled the call waiting function 0 - Disabled 1 - Enabled
%BWFAC-DIRECTED-CALL-PICKUP-1%	String	Configure the direct pickup code that depends on the system defined,such as *97
%BWFAC-CALL-PICKUP-1%	String	Configure the group pickup code that depends on the system defined,such as *98

Tag Name	Valid Settings	Description
%AUTO_ANSWER_BINARY%	0 1	Enabled or Disabled the auto answer function of each line 0 - Disabled 1 - Enabled The X ranged from 1 to 6. It depends on the specific line numbers of the sip phone model.(Same as below related X parameter)
%REJECT_ANONYMOUS_CALL_BINARY%	0 1	Enabled or Disabled the reject anonymous incoming calls function of each line 0 - Disabled 1 - Enabled
%TRANSPORT_TYPE%	0 1 2 3	Defines the SIP transport. 0 = UDP 1 = TCP 2 = TLS 3 = DNS NAPTR
%XSP_ADDRESS_XSI_ACTIONS%	String	Defines the Xsi host URL for performing Xsi Actions
%BWLOGIN-ID-1%	String	Defines the xsi host username
%XSIPASSWORD-1%	String	Defines the xsi host password
%DNS_SERVER_1%	String	Setting the primary DNS server address when configure the static IP address
%DNS_SERVER_2%	String	Setting the secondary DNS server address when configure the static IP address

Example Device Type Specific Tag Settings

Device Management Tag Sets Modify

Display all the device management tags defined in the tag set. Tags can be added to the set or deleted from the set.

OK
Apply
Add
Cancel

* Tag Set Name: x

Delete	Tag Name ▲	Tag Value	Edit
☐	%COUNTRY%	United States	Edit
☐	%LANGUAGE%	English	Edit
☐	%T12_FIRMWARE%	5.51.0.11.rom	Edit
☐	%T20_FIRMWARE%	9.71.0.110.rom	Edit
☐	%T21_FIRMWARE%	21.61.0.10.rom	Edit
☐	%T22_FIRMWARE%	7.71.0.110.rom	Edit
☐	%T26_FIRMWARE%	6.71.0.110.rom	Edit
☐	%T28_FIRMWARE%	2.71.0.110.rom	Edit
☐	%T32_FIRMWARE%	32.0.0.20.rom	Edit
☐	%T38_FIRMWARE%	38.70.0.60.rom	Edit
☐	%T60_FIRMWARE%	60.61.0.60.rom	Edit
☐	%T65_FIRMWARE%	65.61.0.60.rom	Edit
☐	%T80_FIRMWARE%	8.51.0.10.rom	Edit

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[Find](#)
[Find All](#)

OK
Apply
Add
Cancel

Figure 3 Device Type-Specific Tag Settings

5.2.2 Configure BroadWorks Device Profile Type

The device profile type is a system-level structure that defines how the device interfaces with BroadWorks. It also identifies the default configuration files and other files, such as firmware, which are required for the phone to operate correctly. The device profile type is created by the system administrator. Group administrators use the device profile type to create a device profile. The device profile is an instance of the device profile type that is associated with a physical device or IP phone.

There are two BroadWorks device profile configuration methods described: import and manual. The import method takes a DTAF as input and builds the BroadWorks device profile type(s) automatically. The manual method walks the administrator through the steps to manual add and configure the device profile type(s).

The import method should be used if all of the prerequisites are met:

- The BroadWorks Release is 17.0 or later.
- The device profile type(s) being imported do not already exist on the system. (If either a previous import or manual configuration was done, the import fails.)

- There is a DTAF file available for import with a BroadWorks release level that is the same as or prior to the release being imported to. If the DTAF file is at a release level later than the release being imported to, the import can fail.

Otherwise, use the manual method.

5.2.2.1 Configuration Method 1: Import

This section identifies the steps necessary to make use of the Device Management import feature to configure BroadWorks to add the Yealink SIP-TxP/T3xG as a Device Management-enabled device type.

The import method is available in BroadWorks Release 17.0 and later. For previous releases, use the manual configuration method described in the next section.

Download the Yealink SIP-TxP/T3xG CPE kit from BroadSoft Xchange at xchange.broadsoft.com. Extract the DTAF file(s) from the CPE kit. These are the import files. Repeat the following steps for each model you want to import.

- 1) Log in to BroadWorks as an administrator.
- 2) Browse to *System* → *Resources* → *Identity/Device Profile Types* and select *Import*.
- 3) Click **Browse** to find the extracted DTAF file for the model and click **OK** to start the import.

After the import finishes, complete the following post-import configuration.

- 4) Browse to *System* → *Resources* → *Identity/Device Profile Types*.
- 5) Perform a search to find the imported Yealink device profile type, Yealink SIP-TxP/T3xG.
- 6) Browse to the *Profile* page and change the Device Management Device Access FQDN to your Xtended Services Platform or Xtended Services Platform cluster address.

The screenshot shows the 'Device Management' configuration page. The 'Device Access FQDN' field, which contains 'xsp1.iop1.broadworks.net', is highlighted with a red rectangular box. Other visible fields include 'Device Type URL', 'Device Configuration Tags', 'Device Access Protocol', 'Device Access Port', 'Device Access Context Name', 'Device Access URI', 'Default Device Language', 'Default Device Encoding', 'Authentication Mode', 'Device Access Username', 'Device Access Password', 'Re-type Device Access Password', 'MAC Address In', and 'Device Access HTTP Authentication'.

Figure 4 Device Access FQDN

- 7) Click the **Files and Authentication** link and select the option to rebuild all the system files.

Firmware files must be obtained from Yealink. These files are not included in the import. Complete the steps in section [5.2.2.2.3 Static Files](#) to define the static firmware files and to upload the firmware.

NOTE: The non-firmware static files in section [5.2.2.2.3 Static Files](#) are included in the import.

After importing the DTAFs, restart the Application Server to load the *TimeZoneAlias* files.

5.2.2.2 Configuration Method 2: Manual

This section identifies the manual steps necessary to configure BroadWorks to add the Yealink SIP-TxP/T3xG as a Device Management-enabled device type.

The manual method must be used for BroadWorks releases prior to Release 17.0. It is an optional method in Release 17.0 and later. To determine when to use the manual method, see section [5.2.2 Configure BroadWorks Device Profile Type](#). The steps in this section can also be followed to update previously imported or configured device profile type(s) with new configuration files and firmware.

The steps in this section must be completed for the device profile type for each Yealink SIP-TxP/T3xG model.

5.2.2.2.1 Modify Device Profile Type

This section identifies the BroadWorks device profile type settings relevant to Device Management for the Yealink SIP-TxP/T3xG.

Browse to *System* → *Resources* → *Identity/Device Profile Types* and perform a search to find the Yealink device profile type(s) created in section [3.1 BroadWorks Device Profile Type Configuration](#) or add the device profile type for each model using the settings from section [3.1 BroadWorks Device Profile Type Configuration](#) if they do not exist.

The *Standard Options* and *Advanced Options* should already be configured as specified in section [3.1 BroadWorks Device Profile Type Configuration](#). If there are differences, perform an update to match the settings in section [3.1 BroadWorks Device Profile Type Configuration](#).

The following subsections identify the required settings specific to Device Management.

5.2.2.2.1.1 Configure Device Configuration Options

If Device Management has been enabled previously for the device profile type(s), proceed to the next section.

Device Configuration is enabled differently depending on the deployed BroadWorks release.

For BroadWorks Release 18.0 and later, configure as described in the following table.

Parameter	Value	Description
Device Configuration Options	Device Management	Use BroadWorks Device Management

The following figure shows Device Management enablement for BroadWorks Release 18.0 and later.

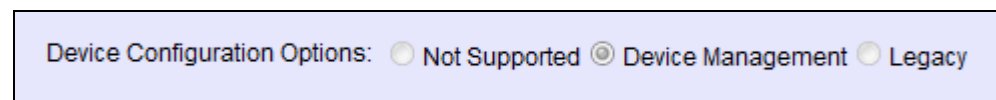


Figure 5 Enable Device Management (Release 18.0 and Later)

For BroadWorks releases prior to Release 18.0, configure as described in the following table.

NOTE: These settings serve only to enable Device Management and are otherwise not meaningful in this context.

Parameter	Value	Description
-----------	-------	-------------

Parameter	Value	Description
Auto Configuration Type	2 Config File	Not meaningful other than it must be selected.
CPE System File Name	not_used	This parameter must not be blank, so set it to "not_used".
Device File Format	not_used	This parameter must not be blank, so set it to "not_used".

The following figure shows Device Management enablement for BroadWorks release prior to Release 18.0.

Auto Configuration Options

Web Based Configuration URL Extension:

Auto Configuration Type: ☒ 2 Config File ☐ 3 Config File ☐ Not Supported

☐ Enable Monitoring

CPE System File Name:

Device File Format:

Figure 6 Enable Device Management (pre-Release 18.0)

5.2.2.2.1.2 Configure Device Management Options

Modify the device profile type *Device Management Options* as directed in the following table. These are common settings that apply to all devices enabled for Device Management.

If Device Management has been enabled previously for the device profile type(s), ensure the existing settings match the settings described in this section.

Parameters not identified in the following table can usually be left at the default values.

Parameter	Value	Description
Device Configuration Tags	Use Default System Tag Set and Tag Set. Select the device tag set created in section 5.2.1.2 Create Device Type Specific Tags .	
Allow Identity/Device Profiles to Configure Custom Tags	checked	Optional
Allow Groups to Configure Custom Tags	checked	Optional
Device Access Protocol	http	
Device Access FQDN	<BroadWorks-XSP-Cluster-Address> Example: xsp.iop1.broadworks.net	Set to the Xtended Services Platform cluster FQDN if using an Xtended Services Platform farm. Otherwise, set to the individual Xtended Services Platform FQDN or IP address.
Device Access Port	<BroadWorks-XSP-Port> Example: 80	This should be set to "80".

Parameter	Value	Description
Device Access Context Name	dms	This does not need to be defined. BroadWorks defaults to the system-defined value.
Device Access URI	<device model name> Example: YealinkT28P	This defines the directory the Xtended Services Platform uses to access the configuration files.

Example Device Management Options Settings

Device Management

Device Type URL: http://xsp1.iop1.broadworks.net:80/dms/YealinkT28P/

☐ No Tags

Device Configuration Tags:

☐ Use Default System Tag Set Only
☒ Use Default System Tag Set and Tag Set:

Yealink TxP Tags

☒ Allow Identity/Device Profiles to Configure Custom Tags
☒ Allow Groups to Configure Custom Tags
☐ Send Email Notification to User upon Device Reset Failure

Device Access Protocol: http
Device Access FQDN: xsp1.iop1.broadworks.net
Device Access Port: 80
Device Access Context Name: dms
Device Access URI: YealinkT28P/
Default Device Language:
Default Device Encoding:
Authentication Mode:
☐ MAC-Based
☐ User Name and Password
Device Access Username:
Device Access Password:
Re-type Device Access Password:
MAC Address In:
☒ HTTP Request URI
☐ HTTP Header with Following Format:
Device Access HTTP Authentication:
☒ Basic
☐ Digest

Figure 7 Device Management Options Settings

5.2.2.2.2 Define Device Profile Type Files

This section describes the BroadWorks Device Management configuration necessary to identify the configuration files and other files that the Yealink TxP/T3xG downloads.

Configuration templates, firmware, and other files the Yealink TxP/T3xG uses must be uploaded to BroadWorks. Download the Yealink TxP/T3xG CPE kit from BroadSoft Xchange at broadsoft.com/xchange. Extract the configuration files from the *Configuration Files* folder of CPE kit. Obtain the firmware files directly from Yealink.

The following table identifies the Yealink configuration files distributed with the CPE kit.

File Name	CPE Kit Template File Name	File Type	Description
		System-level, Device-specific, Static, Time Zone Alias	
Examples:			
BWMACADDRESS.cfg	%BWMACADDRESS%-T3xG.cfg.template %BWMACADDRESS%-TxP.cfg.template	Device-specific	This file contains device specific parameters that the phone needs to load.
y0000000000xx.cfg	y0000000000xx.cfg	System-level	This file contains system level parameters that the phone needs to load.
Ring.wav	Ring.wav	Static	Ringtone WAV format file.
lang+English.txt	lang+English.txt	Static	Default language file.
contactData.xml contactData1.xml contact.xml	contactData.xml contactData1.xml	Static	This file contains the contact information in XML format. T3xG: contactData.xml TxP: contactData1.xml From the V71 version, this parameter is unified as below TxP: contact.xml
DialPlan.xml	DialPlan.xml	Static	Specifies the dialing rules.
AutoDST.xml	AutoDST.xml	Static	Rules set of the beginning and end of Day Light Savings Time.
TimeZoneAliasLabels_Yealink+<model />.properties	TimeZoneAliasLabels_Yealink-<model>.properties	Time Zone Alias	The Time zone Alias file is a BroadWorks Device Management file used to map time zone identifiers between BroadWorks and Yealink phones. A Time zone Alias file is required for each model.
DialNow.xml	DialNow.xml	Static	This data file specifies the dial now rules for the phone.
Dialing.xml	Dialing.xml	Static	This data file specifies the soft keys available on the phone in the call failed calling state.

File Name	CPE Kit Template File Name	File Type	Description
CallFailed.xml	CallFailed.xml	Static	This data file specifies the soft keys available on the phone in the call failed calling state.
CallIn.xml	CallIn.xml	Static	This data file specifies the soft keys available on the phone in the call alerting calling state.
Connecting.xml	Connecting.xml	Static	This data file specifies the soft keys available on the phone in the call connecting state.
Ringback.xml	Ringback.xml	Static	This data file specifies the soft keys available on the phone in the ring back state.
Talking.xml	Talking.xml	Static	This data file specifies the soft keys available on the phone in each of the in-session calling state.
wallpaper.jpg	wallpaper.jpg	Static	Required for T38G and T32G. Picture in JPG format, used for wall paper purpose.
ScreenSaver.png	ScreenSaver.png	Static	Required for T38G and T32G. Picture in PNG format, used for screen saver purpose.
WebItemsLevel.cfg	WebItemsLevel.cfg	Static	This data file defines the permission of the configuration items on the web user interface and phone user interface.

The following table identifies other files that the Yealink TxP/T3xG downloads from the server or uploads to the server. These files are not provided in the CPE kit and must be obtained from Yealink.

File Name	File Type	Description
x.x.x.x.rom	Static	Device firmware file.

Browse to *System → Resources → Identity/Device Profile Types → Files and Authentication* to add the files as described in the following subsections.

5.2.2.2.1 System Files

This section identifies the system-level files used by Yealink and provides instructions for defining the files and uploading for Device Management.

The TxP/T3xG downloads a system file, named as follows:

- T19P: y0000000000031.cfg
- T20P: y0000000000007.cfg
- T21P: y0000000000034.cfg
- T22P: y0000000000005.cfg
- T26P: y0000000000004.cfg
- T28P: y0000000000000.cfg

- T32G: y0000000000032.cfg
- T38G: y0000000000038.cfg

Add a BroadWorks device profile type file to the Yealink TxP/T3xG device profile for the system file using the settings described in the following table.

Parameters not identified in the following table can usually be left at the default values.

Parameter	Value	Description/Notes
Device Access File Format	<system-file-name> Example: y0000000000008.cfg	This is the file name the phone uses to request the file.
Repository File Format	<system-file-name> Example: y0000000000008- %BWTIMESTAMP%.cfg	This is the file name as stored on the Device Management repository.
File Category	Dynamic Per-Type	Only one system file is generated for the profile type.
File Customization	Administrator	This identifies who can customize the system file template.
Assign File	Custom	
Authentication Mode	User Name and Password	This system file is authenticated with the user name and password.
Device Access HTTP Authentication	Digest	

After defining the system file type, upload the corresponding system file template downloaded from BroadSoft Xchange. Use the **Browse** button on the file definition screen. Be sure to click **Apply** after uploading the file.

Parameter	Value	Description
Repository File Format	%BWFQDEVICEID%.cfg	This is the file name format as stored in the Device Management repository.
File Category	Dynamic Per-Device	This file is unique per device.
File Customization	Administrator and User	This identifies who can customize this file template.
Enable Caching	Not set	Caching should not be enabled for device-specific files.
Assign File	Custom	
Authentication Mode	User Name and Password	The phone-specific file is authenticated with the user name and password.
Device Access HTTP Authentication	Digest	

After defining the device-specific file type, upload the corresponding device-specific file template downloaded from BroadSoft Xchange. Use the **Browse** button on the file definition screen.

Select the appropriate device-specific file to upload based on the model as follows:

- TxP models: %BWMACADDRESS%-TxP.cfg
- T3xG models: %BWMACADDRESS%-T3xG.cfg

Be sure to click **Apply** after uploading the file.

Example Device-Specific File Settings

Options:
 Identity/Device Profile Type

Identity/Device Profile Type File Modify

Modify or delete a file type defined in an Identity/Device Profile Type.

OK Apply Delete Cancel

Device Access File Format: %BWMACADDRESS%.cfg
 Repository File Format: %BWFQDEVICEID%.cfg
 Access File: http://xsp1.iop1.broadworks.net:80/dms/mydevice_dm/{%25BWMACADDRESS%25}.cfg
 Access File Note: this URL has undefined content. Validate it manually by replacing any content between {} with valid value(s).
 Repository File: Error File Repository Not Found
 Template File: Download
 File Category: ☐ Static ☐ Dynamic Per-Type ☒ Dynamic Per-Device
 File Customization: Administrator and User
☐ Enable caching

Assign File
☐ Manual
☒ Custom
 Upload File: Choose File No file chosen

Currently using configuration file: /var/broadworks/lpDeviceConfig/type/mydevice_dm/%BWMACADDRESS%.cfg.template

```
# File Created: %BWTIMESTAMP%

#####
##configure for line 1
#####
[ account ]
path = /config/voip/sipAccount0.cfg
Enable = %BWLIN-BINARY-1%
Label = %BWEXTENSION-1%
DisplayName = %BWCLID-1%
```

File Authentication
 Authentication Mode: ☐ MAC-Based ☒ User Name and Password
 MAC Address In: ☒ HTTP Request URI
☐ HTTP Header with Following Format:
 Device Access HTTP Authentication: ☐ Basic ☒ Digest
 Allowed Access Protocols: ☒ http ☒ https ☒ tftp

OK Apply Delete Cancel

Figure 9 %MACADDRESS%.cfg File

5.2.2.2.2.3 Static Files

Static files are files such as firmware and media files that are not configurable and/or do not make use of the dynamic BroadWorks Device Management tags.

The Yealink TxP/T3xG requires the following static files:

- <firmware-version>.rom
- Ring.wav
- lang+English.txt (or other default language file)
- contactData1.xml (contactData.xml for Yealink T38G and T32G)
- AutoDST.xml
- CallData.xml
- DialPlan.xml
- DialNow.xml
- Dialing.xml

- CallFailed.xml
- CallIn.xml
- Connecting.xml
- Ringback.xml
- Talking.xml
- WebItemsLevel.cfg
- wallpaper.jpg (for Yealink T38G only)
- ScreenSaver.png (for Yealink T38G only)

Add a BroadWorks device profile type file to the Yealink TxP/T3xG device profile for each of the static files using the settings described in the following table.

Parameters not identified in the following table can usually be left at the default values.

Parameter	Value	Description
Device Access File Format	<file-name> Examples: <i>Ring.wav</i> <i>Talking.xml</i>	This is the file name the phone uses to request the file.
Repository File Format	<file-name> Examples: <i>Ring.wav</i> <i>Talking.xml</i>	This is the file name as stored in the Device Management repository. Use the same name as the actual file name.
File Category	Static	This is a static file. There are no dynamic tags in the file.
File Customization	Disallow	This file must not be modified.
Enable Caching	Selected	Caching is recommended for static files.
Assign File	Custom	
Authentication Mode	Not set	The static files are not authenticated. Do not select either of these options.

After defining the static file types, upload the corresponding static files. Firmware must be obtained from Yealink. Use the **Browse** button on the file definition screen. Be sure to click **Apply** after uploading the file.

must be converted to a “+” in the file name.) A separate *TimeZoneAlias* file must be provided for each device profile type, corresponding to each Yealink model.

The file must contain the mapping of BroadWorks time zones values to Yealink TxP/T3xG time zone values. The following is an example of the file contents:

```
US_ALASKA=-9
US_HAWAII=-10
CANADA_PACIFIC_TIME=-8
US_PACIFIC_TIME=-8
US_ARIZONA=-7
CANADA_MOUNTAIN_TIME=-7
US_MOUNTAIN_TIME=-7
CANADA_CENTRAL_TIME=-6
US_CENTRAL_TIME=-6
CANADA_EASTERN_TIME=-5
US_INDIANA=-5
US_EASTERN_TIME=-5
CANADA_ALTANTIC_TIME=-4
CANADA_NEWFOUNDLAND=-3.5
```

This file should contain all the time zones supported by the service provider’s BroadWorks system. Restart the Application Server to load this file.

The CPE kit contains the time zone properties files defined for the continental U.S. and Canadian time zones. For other time zone settings, see the *Yealink TxP SIP Phone User Manual* [错误!未找到引用源。](#). When using the DTAF import, the *TimeZoneAlias* files are automatically copied onto the system.

Restart the Application Server for the *TimeZoneAlias* files to be picked up by the system.

5.2.3 Create Device Profile Instance

The previous sections defined the device profile type such that the system is ready to mass deploy device profiles. A device profile is an instance of the device profile type and defines the BroadWorks interface to a Yealink phone deployed at a user’s desk.

This section describes how to create a BroadWorks device profile instance for an individual Yealink SIP-TxP/T3xG phone. Device profile instances are usually created at the BroadWorks Group level and assigned to users.

When you create the device profile, you must define the authentication data. The authentication data is used by Device Management to challenge a request from a phone to download a configuration file. The device must send credentials that match the credentials stored in the device profile.

Browse to the BroadWorks <group> → *Resources* → *Identity/Device Profiles* page and select *Add* to add a new Yealink SIP-TxP/T3xG device profile. Define the device profile instance using the settings described in the following table.

Parameters not identified in the following table can usually be left at the default values.

Parameter	Value	Description
Identity/Device Profile Name	<device-profile-name> Example: Yealink T28 - 01	The device profile name is a unique identifier for the device profile instance.

Parameter	Value	Description
Identity/Device Profile Type	<yealink-txp-device-profile-type> Example: Yealink T28P	From the drop-down list, select the Yealink device profile type created in the previous section.
Authentication	Use Custom Credentials	Use the unique login name and password for each phone.
Device Access User Name	<phone-login-name> Example: lsmith	User name used to log in from the phone. The phone login user naming convention must be determined by the service provider.
Device Access Password	<phone-login-password> Example: 654321	Password used to log in from the phone.

Example Identity/Device Profile Add Settings

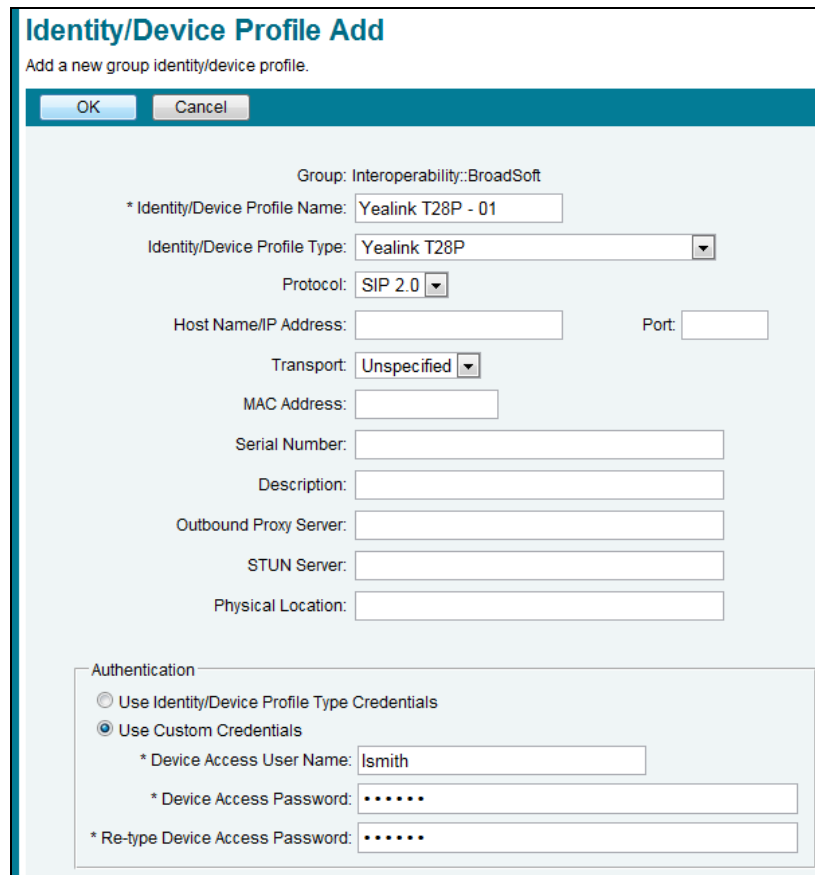


Figure 11 Device Profile Instance

For the Xsi Services Interface feature to be authenticated, it is necessary to override the Xtended Services Interface password for each of the lines at the device profile instance level. To override custom tags at the device profile instance level, click on the *Custom Tags* tab.

Identity/Device Profile Modify

View and modify device management tags used by the Identity/Device Profile.

Figure 12 Device Profile Instance Custom Tags Over-ride

Then click **Add** to add a custom tag with the following parameters:

Parameter	Value	Description/Notes
Tag Name	XSIPASSWORD-<line number> Example: XSIPASSWORD-1	This tag provides the Xsi password of the user for the line which is assigned to the phone. Line number is an integer corresponding to the phone line in assignment.
Tag Value	The user's Xsi password. Example: 123456	

Example device profile custom tag setting:

Identity/Device Profile Custom Tag Add

Add a new custom device management tag to the Identity/Device Profile.

Figure 13 Device Profile Instance Custom Tags Add

Repeat the tag adding process for each of the lines provisioned on the device.

5.2.4 Configure BroadWorks User

Configure the user with the desired BroadWorks configuration and services. Any services that require a specific configuration on the device are managed via Device Management and are defined in the device configuration files, provided that the template files are created with the correct Device Management tags.

The device profile created in the previous section should be assigned to the BroadWorks user. Assigning the device profile to the user automatically causes the Device Management feature to generate the device configuration files for this user's device.

To assign the device profile to the user, browse to the BroadWorks <user> → *Addresses* page and set the parameters as described in the following table.

It is expected that parameters not identified in the following table are already set or are self-explanatory.

Parameter	Value	Description
Identity/Device Profile Name	<device-profile-name> Example: yealink	From the drop-down list, select the device profile instance created in the previous section.
Line/Port	<SIP register address-of-record> Example: 8881001099@as.iop1.broadworks.net	Supply the desired SIP register address-of-record.

Example User Addresses Settings

Figure 14 Assign Device Profile to User

NOTE: Please consider the provisioned Xsi credentials at the device profile level when defining new users or assigning existing device profiles to other users.

5.2.5 Configure Edge Device

In many deployments, an edge device is deployed on the enterprise edge. Configure the edge device SIP server setting with the service provider's session border controller IP address or FQDN.

To integrate the edge device with Device Management, the SBC address tag (%SBC_ADDRESS%) defined in section [5.2.1.1 Create System Default Tags](#) must be overridden at the group level with the LAN address of the edge device. At the *Group* →

Utilities → *Configure Device* page, select the Yealink device profile (example: Yealink T28P). Perform the following steps.

- 1) Click on the *Custom Tags* tab.
- 2) Click **Add**.
- 3) Add the SBC tag.
- 4) For the tag, enter "SBC_ADDRESS".
- 5) For the value, enter the IP address (that is, the edge device LAN IP address).
- 6) To save the tag data, click **OK**.

This Tag/Value is applied to all Yealink model phones in the group using the modified *Device Profile Type*.

Repeat for each Yealink model provisioned in the group.

5.2.6 Configure Yealink TxP

This section describes the steps necessary to configure the Yealink TxP/T3xG to integrate with BroadWorks Device Management.

Log in to the web user interface for the TxP phone (<https://<phone-ip-address>>). Go to the *Upgrade* web page and set the following:

- Check New Config – Power On
- URL – Device Management server (Xtended Services Platform) device address URL
Example: [http\(s\)://xsp1.broadworks.net:80/dms/Yealink_T28P/](http(s)://xsp1.broadworks.net:80/dms/Yealink_T28P/)
- Account – BroadWorks Device Access User Name
Example: lsmith
- Password – BroadWorks Device Access Password
Example: 123456

Restart the phone to force the phone to download the Device Management configuration files and firmware.

Example Login (Default User Name/Password is admin/admin):

Yealink
Broadsoft VoIP

Status Account Network Phone Contacts Upgrade Security

Version

Authentication Required

A username and password are being requested by http://10.1.3.129. The site says: "Enterprise IP phone SIP-T28P"

User Name: admin

Password:

OK Cancel

MAC Address	00-15-65-11-6c-54
Link Status	Connected
PC IP Address	0.0.0.0
Device Type	Bridge
DHCP Server Status(PC)	Disabled

NOTE

Version
It shows the version of firmware.

Network
It shows the information about WAN port and LAN port.

Figure 15 Login Screen

Example Upgrade screen:

Yealink
Broadsoft VoIP

Status Account Network Phone Contacts Upgrade Security

Basic Advanced

Custom Option(128 ~ 254)

Custom Option Type String

URL http://xsp1.iop1.broadworks.net:80

Account yeawh1

Password

Common AES Key

MAC-Oriented AES Key

PNP Config Enabled

Check New Config Power on

Click this button to auto provision immediately

Auto provision

Export / Import Config

Browse...

Import Export

Export System Log

Local

Export

PCAP Trace

Start Stop Export

Confirm Cancel

NOTE

Custom Option
Specify the DHCP Option that you want to use for provisioning. Refer to Auto Provision Manual for details about provisioning.

AES Key
It is provided by ISP.

Click this button to auto provision immediately
Click this button to auto provision immediately.

Export/Import Config
Export the configuration files to backup the settings, and could import all the settings after reset.

System Log
There are two methods to export the system log, Local or Server.

Figure 16 Upgrade Screen

5.3 Upgrading from Previous CPE Kits

The configuration sections above are primarily structured around importing or manually configuring the Yealink device profile types for the first time. Many of the steps are unnecessary when upgrading to a new firmware release or CPE kit version.

5.3.1 General Recommendations for Upgrades

Upgrades can be resource intensive if not managed properly. Recommendations for a managed upgrade include:

- Perform the upgrade during a maintenance window.
- Keep the previous firmware on the system in case a downgrade is required. Older versions can be deleted.
- Perform the upgrade at the group level rather than the system-wide level. To do so:
 - 1) Upload firmware at the system level.
 - 2) Select the group to upgrade.
 - 3) Select *Utilities* → *Device Configuration*.
 - 4) Search for and select the Yealink model to upgrade.
 - 5) Select *Files*. Upload the new or updated configuration files at the group level. (Refer to relevant upgrade section to identify new or modified configuration files.)
 - 6) On the *Files* page, select *Rebuild the files*. This rebuilds all the configuration files associated with the selected Yealink device profile type in this group
 - 7) On the *Files* page, select *Reset the phones*. This causes the phones to restart and pick up new firmware and configuration files.
 - 8) Repeat steps 2 through 7 for each Yealink model in the group to upgrade.
- After all groups have been upgraded, complete the following steps to update the system device profile types and reset the group device profile types to default values.
 - 1) Browse to the *System* → *Resources* → *Identity/Device Profile Types* page. Search for and select the Yealink model device type. Upload the new or updated configuration files at the group level. (Refer to relevant upgrade section to identify new or modified configuration files.) Repeat for each Yealink model.
 - 2) For each group, browse to the *Utilities* → *Device Configuration* page. Search for and select the upgraded Yealink model. Select *Files* and set each updated file back to *Default*. Repeat for each Yealink model.

5.3.2 Upgrade from x.70.x.x to x.71.x.x

The firmware files can be uploaded at any time, but loading configuration files should be done during a maintenance window. Perform the following steps to upgrade the Yealink Device Type to support version x.71.x.x:

- 1) Obtain x.71.x.x firmware from Yealink.
- 2) Upload the new Yealink firmware version x.70.x.x for each Yealink phone model as described in section [5.2.2.2.3 Static Files](#).
- 3) Import DTAF files for any new or not previously imported Yealink models in use by service provider customers.

The remaining steps are done during the maintenance window. The following configuration template files have been modified in version x.71.x.x and need to be uploaded for each Yealink model device profile type:

- <MAC Address>.cfg
 - y0000000000xx.cfg
- 4) Firmware version tags described in section [5.2.1.2 Create Device Type Specific Tags](#) need to be altered to reflect the new version.
 - 5) New custom device tags need to be added per instructions in section [5.2.1.2 Create Device Type Specific Tags](#).
 - 6) Xsi credentials need to be defined at each device profile as described in section [5.2.3 Create Device Profile Instance](#).
 - 7) Perform the upgrade by group, following the steps in section [5.3.1 General Recommendations for Upgrades](#). Alternatively, omit the group steps and perform the upgrade at the system level.

Appendix A: Sample TxP/T3xG Configuration Files

NOTE: The following samples are examples and should be used as a reference only. DO NOT CUT AND PASTE THESE EXAMPLES TO GENERATE YOUR CONFIGURATION FILES. Use the configuration files obtained from Yealink with the specific release to generate your configuration files.

System Default File: y0000000000xx.cfg

NOTE: This is an example file and should be used for reference only.

```
# SIP Default Generic Configuration File
```

Phone-Specific File: <MAC Address>.cfg

NOTE: This is an example file and should be used for reference only.

```
# SIP Device-specific Configuration File
```

Appendix B: %TIMEZONENAME% values

Time Zone	Time Zone Name
-11:00	Samoa
-10:00	United States-Hawaii-Aleutian
-10:00	United States-Alaska-Aleutian
-09:00	United States-Alaska Time
-08:00	Canada(Vancouver, Whitehorse)
-08:00	Mexico(Tijuana, Mexicali)
-08:00	United States-Pacific Time
-07:00	Canada(Edmonton, Calgary)
-07:00	Mexico(Mazatlan, Chihuahua)
-07:00	United States-Mountain Time
-07:00	United States-MST no DST
-06:00	Canada-Manitoba(Winnipeg)
-06:00	Chile(Easter Islands)
-06:00	Mexico(Mexico City, Acapulco)
-06:00	United States-Central Time
-05:00	Bahamas(Nassau)
-05:00	Canada(Montreal, Ottawa, Quebec)
-05:00	Cuba(Havana)
-05:00	United States-Eastern Time
-04:30	Venezuela(Caracas)
-04:00	Canada(Halifax, Saint John)
-04:00	Chile(Santiago)
-04:00	Paraguay(Asuncion)
-04:00	United Kingdom-Bermuda(Bermuda)
-04:00	United Kingdom(Falkland Islands)
-04:00	Trinidad&Tobago
-03:30	Canada-New Foundland(St.Johns)
-03:00	Denmark-Greenland(Nuuk)
-03:00	Argentina(Buenos Aires)
-03:00	Brazil(no DST)
-03:00	Brazil(DST)
-02:00	Brazil(no DST)
-01:00	Portugal(Azores)
0	GMT
0	Greenland
0	Denmark-Faroe Islands(Torshavn)
0	Ireland(Dublin)
0	Portugal(Lisboa, Porto, Funchal)

0	Spain-Canary Islands(Las Palmas) Administrator's Guide for SIP-T4X IP Phones
0	United Kingdom(London)
0	Morocco
+01:00	Albania(Tirane)
+01:00	Austria(Vienna)
+01:00	Belgium(Brussels)
+01:00	Caicos
+01:00	Chad
+01:00	Croatia(Zagreb)
+01:00	Czech Republic(Prague)
+01:00	Denmark(Kopenhagen)
+01:00	France(Paris)
+01:00	Germany(Berlin)
+01:00	Hungary(Budapest)
+01:00	Italy(Rome)
+01:00	Luxembourg(Luxembourg)
+01:00	Macedonia(Skopje)
+01:00	Netherlands(Amsterdam)
+01:00	Namibia(Windhoek)
+02:00	Estonia(Tallinn)
+02:00	Finland(Helsinki)
+02:00	Gaza Strip(Gaza)
+02:00	Greece(Athens)
+02:00	Israel(Tel Aviv)
+02:00	Jordan(Amman)
+02:00	Latvia(Riga)
+02:00	Lebanon(Beirut)
+02:00	Moldova(Kishinev)
+02:00	Russia(Kaliningrad)
+02:00	Romania(Bucharest)
+02:00	Syria(Damascus)
+02:00	Turkey(Ankara)
+02:00	Ukraine(Kyiv, Odessa)
+03:00	East Africa Time
+03:00	Iraq(Baghdad)
+03:00	Russia(Moscow)
+03:30	Iran(Teheran)
+04:00	Armenia(Yerevan)
+04:00	Azerbaijan(Baku)
+04:00	Georgia(Tbilisi)

+04:00	Kazakhstan(Aktau)
+04:00	Russia(Samara)
+04:30	AfghanistanAppendix
+05:00	Kazakhstan(Aqtobe)
+05:00	Kyrgyzstan(Bishkek)
+05:00	Pakistan(Islamabad)
+05:00	Russia(Chelyabinsk)
+05:30	India(Calcutta)
+06:00	Kazakhstan(Astana, Almaty)
+06:00	Russia(Novosibirsk, Omsk)
+07:00	Russia(Krasnoyarsk)
+07:00	Thailand(Bangkok)
+08:00	China(Beijing)
+08:00	Singapore(Singapore)
+08:00	Australia(Perth)
+09:00	Korea(Seoul)
+09:00	Japan(Tokyo)
+09:30	Australia(Adelaide)
+09:30	Australia(Darwin)
+10:00	Australia(Sydney, Melbourne, Canberra)
+10:00	Australia(Brisbane)
+10:00	Australia(Hobart)
+10:00	Russia(Vladivostok)
+10:30	Australia(Lord Howe Islands)
+11:00	New Caledonia(Noumea)
+12:00	New Zealand(Wellington, Auckland)
+12:45	New Zealand(Chatham Islands)
+13:00	Tonga(Nukualofa)

References

- [1] Yealink, Inc. 2013. *Yealink TxP SIP Phone User Guide, Release 71*. Available from Yealink at <http://www.yealink.com/index.php/Support/>.
- [2] BroadSoft, Inc. 2013. *BroadWorks Device Management Configuration Guide, Release 19.0*. Available from BroadSoft at broadsoft.com/xchange.
- [3] BroadSoft, Inc. 2012. *BroadWorks Redundancy Guide, Release 19.0*. Available from BroadSoft at broadsoft.com/xchange.
- [4] BroadSoft, Inc. 2013. *BroadWorks SIP Access Device Interoperability Test Plan, Release 19.0*. Available from BroadSoft at broadsoft.com/xchange.
- [5] BroadSoft, Inc. 2013. *BroadWorks Device Management Interoperability Test Plan, Release 19.0*. Available from BroadSoft at broadsoft.com/xchange.